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Hartford — Technology Club of Hartford, Conn., George William Baker ('92), Secretary, Box 983, Hartford, Conn.

Lawrence, Lowell — Technology Club of the Merrimack Valley, John Arthur Collins, Jr. ('97), Secretary, 67 Thorndyke Street, Lawrence, Mass.

Los Angeles — Technology Club of Southern California, L. A. Parker ('06), Secretary, 764 Pacific Electric Building, Los Angeles, Cal.

Milwaukee — Technology Club of Milwaukee, Charles J. McIntosh ('03), Secretary, care Pierce Motor Company, Racine, Wis.

Minneapolis — Technology Club of Minnesota, Jacob Stone, Jr. ('99), Secretary, 1029 Security Bank Building, Minneapolis, Minn.

New Bedford — Technology Club of New Bedford, Mass., Charles Frederic Wing, Jr. ('99), Secretary, 36 Purchase Street, New Bedford, Mass.

New Orleans — Technology Club of the South, Frank Wyman Crosby ('90), Secretary, 706 Morris Building, New Orleans, La.

New York — Technology Club of New York, Francis C. Green ('95), Secretary, 17 Gramercy Park.

Philadelphia — Technology Club of Philadelphia, Percy Ethan Tillson ('06), Secretary, 223 So. 61st Street, Philadelphia, Pa.

Pittsburg — Pittsburg Technology Association, Waldso Turner ('05), Secretary, 1174 Frick Building Annex, Pittsburg, Pa.

Portland — Technology Association of Oregon, Antoine Gilbert Labbé ('07), Secretary, 227½ Washington Street, Portland, Ore.

Providence — Technology Club of Rhode Island, William C. Dart ('91), Secretary, 148 West River Street, Providence, R. I.

☞Luncheon — Thursdays at 1 p. m. at Brucker's Hotel.

Rochester — Technology Club of Rochester, J. F. Ancona ('03), Secretary, 190 Birr Street, Rochester, N.Y.

Sacramento — Technology Association of Northern California, Howard Coburn Blake ('06), Secretary, 926 6th Street, Sacramento, Cal.

Seattle — Technology Club of Puget Sound, L. A. Wallon ('04), Secretary, The Seattle Electric Company, Seattle, Wash.

Spokane — Inland Empire Association of the M. I. T., Philip F. Kennedy ('07), Secretary, 01129 Hamilton Street, Spokane, Wash.

Springfield — Technology Club of the Connecticut Valley, Edmund Parsons Marsh ('89), Secretary, P. O. Box 791, Springfield, Mass.

Steelton — Technology Club of Central Pennsylvania, Stephen Bedlam ('00), Secretary, Box 183, Steelton, Pa.

Syracuse — M. I. T. Club of Central New York, H. N. Burhans ('07), Secretary, 227 McLennan Avenue, Syracuse, N.Y.

Washington — Washington Society of the M. I. T., Delos G. Haynes ('09), Secretary, 1440 Meridian Street, N. W.

FIXED LUNCHEONS

Boston—the '01-'10 Luncheon Club at American House Rathskeller, Fridays, 12.30–1.30 p. m.

Chicago—Northwestern Association of M. I. T., at Vogelsang's Restaurant, 178 Madison Street, Thursdays, at 12.30 p. m.

Providence—Technology Club of Rhode Island, at Bruckar's Hotel, Thursdays, at 1 p. m.

The Technology Review

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A LARGER CONTRIBUTION FROM THE STATE

Why it should be given to the Massachusetts Institute of Technology—An Argument for its Increase—The Importance of the Institute to the State and to the Nation

SUMMARY.

(1) The Massachusetts Institute of Technology is the most famous school of its kind in the country and one of the most famous in the world. It has established and maintained the highest standards of efficiency and excellence. It would be a calamity to the people of the state should these standards not be maintained.

(2) They cannot be maintained unless it receives $100,000 per annum from the state or elsewhere.

(3) It needs this increased income because the cost of maintaining leadership in this field of education has greatly increased. In the sixteen years that have elasped since the state first made its annual contribution of $25,000, the annual expenditure has increased by $268,547. This increase has been due in part to the natural growth of the Institute itself, in part to the general rise in prices, but more to the increasing recognition by the commercial world of the value of technically trained men, and to the increase in the number, and the enormous increase in the endowments, of similar institutions elsewhere. These changed conditions inevitably affect the salaries that must be paid for competent instructors, and swell all other items in the expenditure.

(4) The Institute is justified in asking for this support from the state because:

(*a*) It is, and always has been, a state institution, founded by the state and bearing the state's name. The state gave it the land

on which its first buildings were erected, has assisted it financially ever since, and has official representatives on its governing body.

(*b*) Owing to the excess of expenditure on the education of its students over the fees received from them, it contributes *directly* about $200,000 per annum towards the education of young men *rom the state of Massachusetts.*

(*c*) Similar institutions, doing no more important work, are receiving far more support from the state. In this state the value of the Agricultural College to Massachusetts was recognized last year by a grant of $210,425, and for five years this college has received on the average an annual appropriation of $172,510 — *exclusive* of its income from the Technical Education Fund, from which it receives twice as much as the Institute. The number of regular students *from the state of Massachusetts* at the Institute is nearly three times as many as at the Agricultural College. In other states the appropriations have been no less liberal. From the latest report (1910) of the United States Commissioner of Education it appears that the following state grants were made during the year. (The numbers in brackets indicate the increase of the grants over those recorded in the report of the previous year.)

California to its State University $693,201 (+ $34,815).
Illinois $1,265,845 (+ $219,845) to the University of Illinois.
Iowa $445,617 (+ $165,617) to the College of Agriculture and Mechanic Arts besides $394,532 (− $43,635) to the University.
Michigan $772,444 (+ $152,579) to the University and $326,000 (+ $16,200) to the Colleges of Agriculture and Mines.
Minnesota $1,030,536 (+ $1,124) to the University.
New York $193,922 (− $73,205) to Cornell.
Ohio $555,187 (+ $21,523) to the University.
Texas $193,585 (+ $16,300) to its College of Agriculture and Mechanic Arts.
Wisconsin $1,147,988 (+ $320,455) to the University.

(*d*) It has done pioneer work in shaping the educational policy of the country and has made notable contributions towards the advancement of science and the development of the industrial and commercial prosperity of the state and nation. It has done this although its numbers were at first so small that there are only about 650 living graduates who took their degrees more than

twenty years ago. Today there are over 1,500 students in its courses, and great things may be expected from the efficient training of such numbers during the course of the next ten years. The economic efficiency and the further development of the state's manufacturing and transportation industries will depend primarily on the extent to which scientific methods and improvements are introduced.

(*e*) It is the heart of the state's system of industrial education, a system that will be vitally affected by the standards and ideals that the Institute maintains. It has already given directors to such institutions as the Textile Schools, the Franklin Union, the Wentworth Institute, and the Lowell School for Industrial Foremen. It must continue to supply men competent to direct the growth of industrial education, a growth that is expected to be unusually rapid within the next generation. The strength of the Institute is vital to the success of this movement, for if the heart be weak the condition of the whole system is precarious.

(*f*) The Commonwealth of Massachusetts, in accordance with its great traditions and recognized intellectual leadership, is bound to provide for its citizens the best system of higher education that is practicable. On account of the special circumstances of the state, technical education is absolutely vital to its continued prosperity, and especially in this field nothing but the best can be good enough for Massachusetts. Without the aid here asked for the Institute cannot possibly maintain its leadership.

Argument.

The Massachusetts Institute of Technology was incorporated by an Act of the Legislature of Massachusetts "for the purpose of aiding by suitable means the advancement, development and practical application of science in connection with arts, agriculture, manufacture and commerce." This Act was approved by Governor Andrew on April 10, 1861. At this period there were many forces at work to impress on farseeing men the necessity of radical changes in education in order that the country might profit as it should by the discoveries of science and by the application of its method and its spirit to the great practical problems of the day. Some such school as the Institute of Technology would inevitably have been founded somewhere about half a century ago. The fact that it was founded in Massachusetts was due

mainly to the foresight of Rogers who planned it, secured its foundation at the hands of the Commonwealth, and afterwards as its first president controlled its upbuilding with consummate wisdom. He was not a Massachusetts man, nor even a New Englander; when the Institute was founded he had spent upwards of forty years of his life in his native state — Virginia. As a scientist devoted to the cause of education he had become convinced that there was urgent need for an educational institution of a different type from any then existing in this country. He made a careful survey of the field and deliberately selected Massachusetts as the strategic point best suited for the new venture. He was drawn to this state because of the character of its people, their high ideals in educational matters, their insistence on the best that is available as being alone good enough for Massachusetts. He believed that here more easily than anywhere else it would be possible to set up and to maintain the very highest standards of scientific education, and the whole success of the school — as he conceived it — depended on the maintenance of the *highest* standards. In all respects save one Rogers' choice of Massachusetts has been fully justified. The Institute has trained a number of men who are now in the very front rank of science, men who have extended far the boundaries of knowledge and thereby gained a world-wide fame. In addition to this its former students are to be found in positions of power and responsibility in every state of the Union, engaged in the work of developing mines, opening up the country by means of railroads, applying scientific methods to the great problems of transportation, power production and distribution, advancing chemical industries, conserving the public health, and contributing in countless other ways to the increase of the nation's wealth. These men have not come exclusively from any particular class, rich or poor, but the greater number are men whose capital is their character and their power; they have been drawn from a source to which the state naturally looks for new energy, new enthusiasm, and the power to cope successfully with new conditions.

However, it is not merely by its direct influence on its students that the success of the Institute and its value to the state are to be gauged. Its indirect influence has been almost equally notable. It has done pioneer work in education in the breaking down of old traditions and the establishment of new methods. It has

given strength and dignity to the "practical" and "laboratory" method and proved conclusively its value in dealing effectively with large bodies of men. It was "the first school to equip a mining and metallurgical laboratory for the instruction of students by actual treatment of ores in large quantities; the first to establish a laboratory for teaching the nature and use of steam, and a laboratory for testing the strength of the materials of construction in commercial sizes; and the first in America to establish a department of architecture. It was also the first in this country to set up distinct and separate courses of study in electrical engineering, in sanitary engineering, in chemical engineering, and in naval architecture." In Massachusetts we are, perhaps, too near the Institute to have a proper perspective of its importance, but there is no lack of impartial testimony to guide us to the truth. Sir William Mather after a study of the leading schools of the kind in the world held it up as the best model for his own country. Speaking in London of the Massachusetts Institute of Technology he said, "The spirit and energy of the students, their conspicuous practical knowledge, the thoroughness with which their scientific knowledge is tested in the course of instruction, and the power of adaptation and resource they possess on entering workshops and manufactories, railroads, or mines, public works and constructive engineering — all these fruits of the training of this Institute are, so far as I have seen, not equalled on the Continent. I think these are the qualities we need in England." For years the Institute has been visited by distinguished bands of engineers and educators from various parts of the world, and reports to governments or societies in England, France, Germany, Switzerland, Russia, Spain and Japan set forth in flattering terms the high esteem in which the Institute is held abroad. At home it has been subjected to the sincerest form of flattery — imitation — its methods being copied in almost every similar institution throughout the country. Its graduates are eagerly sought for everywhere and the prestige of the Institute is of the highest order.

Financial Handicap of an Engineering School

To this extent the justification of Rogers' choice has been complete. Only in one matter has there been disappointment, and that is in the financial support that the Institute has obtained.

It is true that the state has helped substantially and that there have been liberal private benefactors, the total gifts from private sources having amounted to over five million dollars. Especially, however, within recent years there has been a failure to appreciate the high cost that education of this type demands *if it is to be the best.* Not only does it require much more costly machinery, but more teachers and more highly paid teachers than the older forms of education. The laboratory method, which is the very essence of education of this type, cannot be applied successfully where a teacher has to supervise the work of a large group of students. To increase the difficulty the Institute is in a sense hurt financially by its own success. The value of technically trained men is now recognized in the commercial world, and their services must be more highly paid for when they are sought as teachers than was the case formerly. In addition to this the Institute is no longer alone or nearly alone in the field of technical education. It has to compete for its teachers not only with the world of business, but with numerous educational institutions that have far greater financial resources, many of them being supported by states fully alive to the wisdom of dealing with such institutions in a thoroughly liberal spirit. All these special forces tend to increase the expenses of the Institute, and work in conjunction with the general pressure that is increasing the cost of living everywhere and thereby inevitably increasing the price of labor, intellectual as well as manual. Recently, without adding to the number of its instructors, the Institute in a single year has had to add $23,000 to the salaries it pays, and even now is in constant danger of losing some of its best teachers owing to the greater financial attractions that can be held out elsewhere. The annual payment for salaries is $72,720 greater than it was five years ago, although within that period there has been very slight change in the number of instructors. Since the grant of $25,000 per annum was first made by the state there has been an increase of $171,443 in salaries and of $268,547 in the total annual expenditure required to maintain the Institute in the front rank. The increase in the excess of expenditure over receipts from fees has been $148,788. Unless considerable financial assistance comes from some source the present outlook is serious. Of recent years, in spite of the most rigid economy, there has been an excess of expenditure over income amounting on the average to more than

$30,000 per annum. The grant of $25,000 that has been given by the Commonwealth of Massachusetts for the last sixteen years expires this year; and at the same time there comes to an end an income of over $40,000 per annum guaranteed five years ago by certain friends of the Institute. It thus appears that at least $100,000 per annum will be required merely to maintain the Institute at its present level, without providing for any advances, although new developments in various directions are urgently called for. Were it less hampered financially it might render great service to the state by establishing a number of testing and research laboratories, like its present Research Laboratory of Applied Chemistry, to which manufacturers might, under proper regulations, bring their products to be tested and their problems to be investigated; it might extend such instruction as is now given by its teaching staff in the Lowell School for Industrial Foremen, in which evening courses are carried on for the benefit of working men; it might organize, in various cities in Massachusetts, scientific instruction relating to important specific industries, thereby greatly extending the scope of its influence and of its usefulness. However, the extension of its activities in any such directions, however desirable, cannot be undertaken until its present work has been adequately provided for.

It might be suggested that the Institute should raise its fees, but it should be borne in mind that these fees are now $250 per annum, as high as those of any other similar institution in the country, and higher than all save one. The usual fee in the engineering schools of Eastern universities — such as Yale, Princeton, and Cornell — is $150, while throughout the West and Middle West the fees are generally little more than nominal, $30 or less.

Under such circumstances it is natural for the Massachusetts Institute of Technology to look to the state for further assistance. It has never been a private institution, nor borne any other name than that which it received from the state on its foundation at the hands of the state — the *Massachusetts* Institute of Technology. Its connection with the state is recognized, amongst other ways, by the presence on its governing body of three state officials — the governor and the chief justice of the Commonwealth and the commissioner of education. The state gave it the land on which its first buildings were erected and since then has contributed

half a million dollars towards its general expenses. The state has made it one of the two beneficiaries of the income from the Technical Education Fund established by the United States government. In addition to this the state has shown its faith in the Institute by encouraging young men from Massachusetts to go there with the aid of state scholarships. Unfortunately, the establishment of these scholarships has not lightened the financial load on the Institute. On the contrary it has increased the burden. At the time when the state scholarships were founded the tuition fees at the Institute were $200 per annum and it was on this basis that the sum paid by the state for each scholar was determined. Since then the fees have been raised to $250, so that the Institute gets $50 less from a state scholar than from any other student. Thus the forty state scholarships cost the Institute $2,000 per annum. This sum is, however, insignificant in comparison with the total *direct* financial contribution that the Institute makes annually towards the education of the youth of Massachusetts. The Institute makes every year a report to the legislature in which is set forth a complete statement of its financial condition. An examination of these reports in recent years will show, by the simple process of dividing the total current expenditure by the number of students, that the cost for tuition and maintenance is $390 per student. To this must be added at least $80 per student to cover the interest on capital invested in land, buildings and equipment (*in excess* of what has been contributed by the state) and to make a reasonable allowance for depreciation. Thus the total cost to the Institute is at least $470 per student. Last year 852 students came to the Institute *from the state of Massachusetts.* Eighty of these were state scholars paying $125 per year on what is known as a "half scholarship basis," so that the cost of each to the Institute in excess of fees received ($125 from the scholar and $100 from the state) was $245, or a total of $19,600 for all the scholars. Each of the others cost the Institute $220, so that the total expenditure on their behalf was $169,840. It thus appears that the Institute contributed directly a sum of $189,440 last year — a year that was in no respect abnormal — towards the education of young men *from this state.* In addition to this it paid $26,875 towards meeting the tuition fees of students (outside of the scholarships provided by the state). A large part of this went to students from Massachusetts, although the

grants were not restricted to them as in the case of the state scholarships. If the state should make the annual grant of $100,000 that is asked for, it would contribute half what the Institute is now contributing towards the education of young men from Massachusetts.

What is the true principle that should guide legislatures in determining the amount of their contributions to educational institutions is, of course, a matter that gives room for difference of opinion. It may be well, however, to estimate the support that the Institute should receive from the state on the basis of various principles that have been adopted elsewhere.

The policy of most of the progressive Western states is to give practically free tuition to all students that come from within the state. On this basis the Massachusetts Institute of Technology should receive over $400,000 per annum from the state in order to maintain its courses at their present level. Where a less liberal policy is adopted the state, instead of bearing the whole cost, pays a certain proportion of the tuition fees to encourage students, or a certain proportion of the income from private benefactions to encourage the benefactors, or a certain proportion of the income from productive funds to encourage the trustees in a prudent use of the benefactions that they receive. The proportion supplied by the state varies enormously, as may be learned from a study of the statistics published annually by the United States commissioner of education. There the facts are set forth with regard to all the institutions of higher learning in the Union — between 400 and 500 universities, colleges, and technological schools. Taking the total for all these institutions during the last five years for which published statistics are available it appears that the average annual income is, in round numbers, ten million dollars from productive funds, seventeen million from private benefactions, thirteen million from tuition fees, and thirteen million from the state. If the Institute were to receive the *average* treatment at the hands of the state, then on the basis of productive funds it should get $117,000 annually, on the basis of private benefactions $136,000 annually, and on the basis of tuition fees $325,000 annually.

However, we are not left without clearer guidance as to what should be the policy of the Commonwealth of Massachusetts. The legislature in this state has by its own acts indicated in the

most practical way its attitude toward higher technical education. It has done this by the financial support that it has afforded to a sister institution engaged like the Institute of Technology in work of vital importance to the welfare of the state. Last year it appropriated $100,925 for general maintenance and $109,500 for buildings to the Massachusetts Agricultural College. In the last five years its annual appropriations towards this agricultural college have *averaged* $82,970 for maintenance and $89,540 for buildings, making a total annual appropriation of $172,510 — *exclusive* of what it has granted to the institution out of the Technical Education Fund, from which the Agricultural College gets twice as much as the Institute of Technology. Last year the number of regular students who came *from the state of Massachusetts* to work towards a degree was 293 at the Agricultural College and 852 at the Institute of Technology, nearly three times as many at the latter as at the former. If the appropriations to the two institutions had been proportioned to the number of Massachusetts students at each, the Institute of Technology should have received more than $500,000 per annum.

The contributions that have been made by the alumni of the Institute towards the advancement of science and the development of the industrial and commercial prosperity of the state and nation have already been very great. The mark that the Institute has made in this way and the distinct impress of its methods on the educational policy, not only of this country but of the world, are all the more striking when regard is had to the fact that the numbers at the Institute were very small until recent years. The first graduating class in 1868 contained only fourteen members, and there are only about 650 living graduates who took their degrees more than twenty years ago. The rapid expansion of the Institute has been so recent that more than half its graduates have gone forth within the last ten years. Since the influence of the small band of early alumni has been so marked, it is reasonable to expect much greater things from the large numbers of today and of tomorrow. During the next ten years, allowing for normal growth, at least 5,000 men will come under the influence of the Institute for two years or more. It is impossible to estimate accurately in dollars what additional contribution to the national wealth they will make through the benefit of the Institute's training, how much their spirit of energy and of resourcefulness

will mean in inventions and in industrial advancement, how many old industries they will improve or how many new industries they will establish, or what contribution they will make towards the promotion of a higher sense of civic duty and a higher standard of social efficiency. If, however, on the average they devote themselves seriously to such matters for twenty years after leaving the Institute, the enhanced value of their services to the state need only be $10 a year to recoup the state for an annual contribution of $100,000 towards their education at the Institute.

The figures given above indicate the attitude of the states throughout the Union towards higher education in *general.* Here, however, we are concerned with education of a special form, a form whose vital importance to the state can no longer be open to question. Fifty years ago when the Institute was founded much argument was needed to demonstrate that higher technical education was one of the great factors of industrial growth. Now that science has completely revolutionized the conditions of industrial and commercial life the question is no longer debatable. It is generally conceded that Germany's wonderful rise in the scale of commercial nations is mainly due to her steady and business-like efforts to promote the higher forms of technical education. Her success has been an impressive object lesson to the world, a lesson that this country and in particular this state cannot afford to ignore. The country as a whole has reached a critical stage of its development. Hitherto its natural resources have seemed almost limitless, and there has been little serious demand for the adoption everywhere of the most scientific, and consequently the most economic, methods of production and of distribution. There has been waste everywhere, until a national habit of extravagance has been formed. Now, however, the great diminution and in some cases the actual exhaustion of natural resources is being forced into evidence. Even in the matter of food supplies the United States appears to be rapidly approaching the turning point when it will cease to supply its own demand and will change from a food-exporting to a food-importing country. It is, therefore, a matter of national duty to train men who can face the new conditions. It is by the application of scientific methods that commercial and industrial efficiency can be improved, and waste can be avoided only by the aid of men thoroughly trained in the use of such methods. To train such men is the great task of the

technical schools, and these schools cannot do their work thoroughly without adequate financial support. This applies to technical schools everywhere throughout the country, but there are special reasons why Massachusetts should keep the lead that it obtained through the wisdom and foresight of its leaders half a century ago. That Massachusetts should attach special importance to technical education was clearly recognized by the committee on education in its report to the legislature that laid, in a practical way, the foundations of the Massachusetts Institute of Technology. This state has neither mineral wealth, nor great forests, nor conspicuous agricultural resources. It has no peculiar advantages of either soil, or climate, or conditions of labor. Its wealth and prosperity can be kept relatively high only by the exercise of superior intelligence, and to this end it cannot afford to have anything but the best in the field of technical education. Wisely was it set forth in the Constitution of the Commonwealth that "it shall be the duty of legislatures in all future periods of this Commonwealth to cherish the interest of the sciences and to encourage private societies and public institutions for the promotion of agriculture, arts, sciences, trades and manufactures."

RICHARD C. MACLAURIN.

The Society of Arts Flourishing

The Society of Arts was organized for the season of 1910–11 with the following executive committee: Richard C. Maclaurin, President of the Institute, Elihu Thomson, Theodore N. Vail, James P. Munroe, Carroll W. Doten, Frederic H. Fay, and I. W. Litchfield. The *Bulletin* of the Society has been enlarged and its name changed to *Science Conspectus* which will be issued during December, January, February, March, and April. It will present a general survey of the field of science and its applications in terms within the understanding of the lay reader. During the last two years 100 new members have been added to the roll. At the meetings in December, thirty-five new members were elected.

THE PRESIDENT'S REPORT

Real Educational Co-operation—New Course in Administration planned—Research Work of High Grade—Fiftieth Anniversary of the Granting of Charter to be Commemorated

The President's annual report which was presented to the executive committee of the Corporation at its meeting December 14th is a document of unusual importance and interest, not only to Institute men, but to the general public as well. It treats the Institute broadly, dealing frankly with the more important problems before us and attaching deserved importance to the coöperative work which has developed during the last two or three years among the alumni and the undergraduates.

The most interesting feature of the report deals with the future of the Institute. Referring to the site question, the President says: "We are certainly much nearer a solution than we were a year ago and the prospect for an early settlement seems hopeful. Subsidiary to the problem of securing a new site is that of disposing of the old one. It seems probable that the Institute's property on Trinity Place can be disposed of advantageously in the not distant future and steps are being taken to make possible our removal from Boylston Street."

EDUCATIONAL COÖPERATION

The President also refers to the matter of coöperation with other institutions, particularly with Harvard and with Boston University, saying at the same time that, "No large scheme of coöperation can be carried through with any hope of its permanence while the question of the future site of the Institute remains unsettled." This matter was also mentioned in the President's report last year as well as in his speech at the reunion banquet in 1909, when he said: "There will be no more talk of merger with Harvard, but I

think we should be false to every precept of decency if we did not reciprocate most heartily the genuine expression of good will that President Lowell has so recently made, and I think we should be equally false to every precept of common sense if we failed to do our utmost to coöperate with Harvard wherever such coöperation is possible. I believe that in the domain of applied science there is much that we can do for our mutual help, but to make coöperation real and practical, we must be strong enough for independence."

As will be seen from the following quotation from the President's report we are already coöperating to a considerable degree with a number of educational institutions: "A number of the assistants and instructors at the Institute are engaged in teaching at the Boston Y. M. C. A., the Franklin Union, the Wells Memorial Institute, and the People's Institute. On a higher plane comes the work of assistants, instructors, and some of the professors in the Lowell Institute School for Industrial Foremen, an extremely important educational work that is carried on almost wholly by members of our staff. In the scheme of university extension which has recently been adopted the Institute contributes not only lecture rooms and laboratories for the use of a number of the professors, but gives the services of several of its faculty and some of their assistants. Professor Derr gives a course on physics, Professors Smith and Wickenden, courses on applied electricity and Professor Sumner, a course on the history of art and civilization. More direct examples of coöperation are afforded by the lectures at this Institute given by Doctor Stiles, the head of the Biological Department at Simmons College. As an offset to this help from Simmons, Professor Sedgwick gives a course of one lecture a week and Professor Prescott one of five hours a week during the first half-year at Simmons College. During the present year, Professor Despradelle gives regular lectures in architectural design at Harvard University. At the same university, Dr. F. J. Moore gives a lecture course of two hours a week on chemistry, Professor Dewey, two lectures a week, during the first half of the year on money, Professor E. B. Wilson of the Department of Mathematics is to give a course on the application of probability in theoretical physics, and Professor G. N. Lewis a special course on the principle of relativity. By special arrangement with the authorities of Harvard, the lectures of Professor Shimer on paleontology are being attended by a number of students from Harvard;

and next term a few of the students from the Institute are to take advanced courses in physiography at Harvard. The coöperative spirit is evidently at work; how far it should lead us in the future, is one of the larger problems that confronts us."

A COURSE IN BUSINESS ADMINISTRATION

The reference of the President to the contemplated new course to prepare men for administrative positions will appeal strongly to the whole alumni body:—

"A change that has not yet been effected, but which has engaged the attention of the Faculty and of the Executive Committee, has reference to the establishment of a course or courses that would prepare men more definitely for administrative positions in the arts and industries. A scheme for some such course was drawn up nearly ten years ago, and since then schools of business administration have been established in various parts of the country. It is felt by those who favor the change that there are special reasons for such work being connected with a school of applied science, partly because the method and the spirit of science form the basis of success in many important businesses, and partly because so large a share of modern business is concerned with the applications of science to industrial problems. There is a large and important field of work of this character that might be occupied by the Institute without encroaching on what is being done elsewhere in this community, and the occupation of this field would help to round out the system of education offered by the Institute."

RESEARCH WORK ON HIGH PLANE

The character of the research work done at the Institute is unusually high. President Maclaurin's general comment is as follows:—

"It is recognized by all who have studied the problem seriously that the spirit of research is vital to the success of a great scientific school. The Institute has been fortunate from the first in having connected with it a considerable number of men deeply imbued with this spirit, and it is encouraging to observe that an increasing number of able young men are being attracted to this field. The influence of such men is all for good and, in such an institution as this, there is no danger of the research element unduly predominating and making the courses too academic or too remote from the

pressing practical needs of the day. It is particularly gratifying to notice that we continue to retain the services of men of the front rank in pure science, a fact that has been emphasized by an impartial witness in a recent survey of American men of science. In the field of research, of course, it is quality and not quantity that is all-important. I have little sympathy with the elaborate efforts that are made in some places to turn out a great volume of research. The second-rate work might easily be dispensed with, although the first-rate is beyond price, and it goes without saying that to have first-rate work we must have first-rate men."

WORK OF PREPARATORY SCHOOLS ANALYZED

This data relating to the ranking of local preparatory schools compiled by the registrar is very comprehensive, as it takes in nearly one thousand students for a period of twelve years. The scholarship rating of these one thousand men has been found on a scale of one hundred—not that one hundred indicates a perfect grade of scholarship, but only determines the group to which the men belong in regard to ranking.

Upon examination of the data contained in this report it is found that the average percentage of graduates for the 984 students—whose records were considered—is 57; the average percentage of failures is 33; the average standing of students who graduate (scale 100) is 60; and the average standing of first-year records (scale 100) is 61.

UNDERGRADUATE INITIATIVE

"As does the number of students continue to be satisfactory, so there is no falling off in quality. Their health continues excellent and their spirit admirable. No better antidote to pessimism could be recommended than to get in close contact with such a body of young Americans. In the main they are men of ability, energy, and purpose, singularly free from sordid ambitions and anxious to do the best not only for themselves, but for their fellows. It is an encouraging study to trace the growth within recent years of student government at the Institute. This government concerns itself with athletics and with that great variety of interests grouped under the unfortunate title of "student activities." As regards athletics, the government is in the hands of a council composed of three undergraduates and four alumni without any representatives from the Faculty. This council has been conspic-

uously successful in establishing a sane athletic policy, aiming to make athletics a healthful exercise rather than an absorbing business. It encourages an active participation in manly sports by the whole student body rather than the development of exceptional skill by a few. It prefers competitions between individuals or teams within the Institute to frequent contests with other institutions, thereby avoiding such fevers of excitement as sweep over many of our colleges and tend to demoralize the entire student body. This athletic policy has been established by the undergraduates in coöperation with former students of the Institute; but the rules that have been developed to control the other "activities" are due in even larger measure to undergraduate initiation. Two years ago the Acting President directed your attention in his annual report to the establishment of the "point system," a system designed to eliminate one of the most serious faults in societies of students,—the undue loading of certain individuals with duties and honors. The system here initiated has been used as a model for similar schemes that have been adopted by various educational institutions throughout the country. In 1893 the undergraduates set up what is known as the Institute Committee, a committee that is regarded as the official representative of the entire student body. Its aim is to promote in all matters the welfare of the students, but for long it could work towards this end only by resolutions and petitions. In process of time it came to be recognized by the students here, as by more august assemblies elsewhere, that legislation to be effective must be associated with the power of the purse. During this year there has therefore been established a Finance Commission, composed of the President of the Institute Committee and two alumni. The power and expected effectiveness of this Commission are thus set forth by one of our graduates:—"The Finance Commission will have the power to insist upon a clear, business-like financial report being presented monthly by each activity. If the financial condition of any activity is such that, in the opinion of the Finance Commission the activity will not be able to pay any debt incurred, the Finance Commission will have the power to insist upon some guarantee from the activity that the amount to cover such indebtedness be raised. The results that this plan is expected to accomplish are chiefly three: *first*, by insisting on clear monthly reports, and the proper methods of accounting necessary for them, it will

allow every manager to know definitely at all times just where he stands instead of being willing to rely on guesses, as has been too often the case; *second*, by demanding in advance a guarantee of payment of debts, where a deficit is foreseen, it will prevent any recurrence of non-payment of debts, and thus give much needed protection to the good name of the Institute; and, *third*, by giving the students the advice and oversight of experienced business men, it will make the business training obtained through management of student activities always of real value instead of being often a positive influence for bad."

FIFTIETH ANNIVERSARY OF THE ESTABLISHMENT OF THE INSTITUTE

Referring to the fiftieth anniversary of the granting of the charter to the Institute, the President says:—

"On the 10th of April next it will be fifty years since the charter of the Institute granted by the legislature was signed by Governor Andrew. The record of work accomplished in the half century that has elapsed has indeed been a remarkable one. The Institute has done pioneer work for education. Its methods and ideals have been carried into almost every quarter of the globe and into almost every phase of education. Its alumni have made important contributions to pure science, besides taking a large share in the work of applying scientific methods to the solution of the great practical problems of improving the health of the nation, opening up its territory, and developing almost every branch of its commerce and its industry. The impress that the Institute has made is all the more striking when we consider the small number of its students in the early days; and its great achievements under such conditions should inspire your Corporation with hope and confidence for its future. It does not seem proper that the fiftieth anniversary of its foundation should pass by without special comment. It has therefore seemed wise to the executive committee to adopt a suggestion made by the Alumni Council and celebrate this anniversary by holding a Congress of Technology on the 10th and 11th of April next. It is hoped that at this congress men of eminence will be present to set forth some of the broader results of the application of science to industry which it is the main purpose of this Institute to further and to indicate the gain in industrial efficiency that may be expected from the extension of its influence."

TECHNICAL EDUCATION IN AERONAUTICS

A Course Could be Started Now—The Framework Already Provided—Definite Course Suggested

The following paper read at the meeting of the American Association for the Advancement of Science by C. H. Peabody, '77, is of such present interest that we present it to the readers of THE REVIEW:—

The engineering world is so far committed to technical education as one source of supply of young engineers that there can be no question that special courses of instruction for aëronautical engineers will ultimately be established by our leading technical schools. The real question is whether now is a desirable time for certain schools to offer such courses.

There are several aspects to this question, all of which present difficulties; but the one which must first be found is that of financial support. If this is forthcoming at a given school it is not hazardous to predict that the school so favored will undertake to meet the other phases as they come up.

There is no question as to the demand for such a course; applicants have already appeared who perforce are taking the "next thing." Some applicants are so far in earnest that they will force their way into the new profession; others doubtless are merely attracted by the novelty of the latest development of engineering. In a profession that is forming, all successful workers must be pioneers, and real pioneers are so rare that many must be offered of whom a few will succeed. For this reason my opinion is that the course should be offered to undergraduates in order to get plenty; those who cannot qualify as pioneers will find their places in the great body of engineers who can follow paths already blazed.

One phase of the question which may not be without difficulty, is to find material for instruction. There is a flood of books, pamphlets and magazines on aëronautics most of which is ephemeral, and there will be only a small residuum of solid worth. But from it all a considerable mass of material for instruction

may be accumulated, as instanced by Lanchester's "Aërodonetics and Aërodynamics." Whether or not all the views of that author be accepted, he has shown in a masterly way the field to be occupied. The complementary field of aërography has already been well explored in the study of climate and weather.

But the special field of aëronautics is and always will be restricted as compared with the great background of general engineering. In the various courses of construction or engineering as offered by any of our leading technical schools, there is apparently a wide diversity, but what ought to strike our attention is the real solidarity of such courses. And the tendency is toward greater solidarity. For example, two courses as diverse as civil engineering and chemical engineering will each show a strong course in steam engineering; the instruction being wider and better than was given but a few years ago to mechanical engineers who took steam engineering as specially pertaining to their profession.

All this large background is now ready at any good technical school for use in building up a course in aëronautical engineering. To change the figures, the foundation and main structure are now ready and only the superstructure need be provided. And what is of even more importance than special instruction in the restricted field of aëronautics, is the cultivation of the mental habits that every engineer must acquire; and experience shows that the great body of subject-matter taught in technical schools does give students that habit of mind.

It is not unlikely that a technical school suddenly confronted with the task of establishing a course in aëronautical engineering might be most troubled to find the teachers. It might seem natural to turn to some one of the leaders in the recent development of aëronautics, and doubtless such a pioneer would have much to tell if he could be induced to do so, and had any gift of exposition. Is it to be supposed that a successful exponent of the arts of building airships and flying them could be induced to turn to the humdrum trade of teaching? if so, is there reason to expect that he would have or could cultivate the art of teaching? Perhaps!

The writer has had the good fortune to have means for securing lecturers on the profession which he is engaged in teaching. Some have been the leading naval architects and marine engineers of America and some were induced to make the voyage from France or England for the purpose. The success has been gratifying and

the stimulus to the students has been of the first importance. But such lecturers are, and must be, essentially ornamental; they cannot be built into the solid structure. That must be the work of the professional teacher.

The greater part of the teachers of engineering have been bred in the schools. They have acquired "experience" either in brief apprenticeships to the trade of engineering, or during vacations, or by serving as experts. All of these opportunities of contact with the real work of engineering are invaluable. There is a tendency, if the experience is really extensive, toward translation into the profession of engineering, and then a good teacher is lost. But to the teacher experience is worth most as influencing his habit of mind; there are other and better ways of collecting the material for instruction.

How does this bear on teaching aëronautics? Why, it leads to the suggestion that a young teacher of engineering be assigned to the duty, and given opportunity to gain experience. His tether should not be too long. An aëronautical laboratory is the natural adjunct to a course in aëronautics and in it would lie his real opportunity.

The writer is of the opinion that now is a good time to start a course in aëronautics. If the financial backing can be assured the course and the teacher can grow up together. Those taking the course would suffer no hardship in any case; during their course in school they would have the inestimable advantage of the enthusiasm of themselves and their teachers; those who find their way into aëronautical engineering will be worth the cost of the entire course; those who turn to more conventional branches of engineering will find their enthusiasm transferred with them. The writer, as already said, favors an undergraduate course, for reasons given and for others that would take too long to express.

In order to offer basis for a discussion and to give at least a semblance of reason for his opinions the writer offers a suggested course in aëronautics. It is made up by the ingenuous process of taking the course in naval architecture and marine engineering at the Massachusetts Institute of Technology, and writing down *theory of aëronautics, aëronautical design*, etc., in place of *theory of naval architecture, ship design*, etc. This will explain the existence of such courses as *hydraulics* and *electrical engineering*. The writer is convinced that a satisfactory course in aëronautics could

be given substantially as written down; his reason is that the course in naval architecture has proved to be satisfactory and reasonably complete. He further knows that the general engineering background is sufficient to prevent anyone from being stranded. But the writer begs that he may not be held responsible for finding the subject-matter for the course of instruction specified in aëronautics or aëronautical design, nor would he venture to restrict instruction to the numbers of lectures written down.

SUGGESTED COURSE FOR AËRONAUTICAL ENGINEERS

First year: lectures and recitations: mathematics, 120 hours; chemistry, 90; modern languages, 90; literary subjects, 90. Drawing and laboratory: chemical laboratory, 120; mechanical drawing and descriptive geometry, 180; freehand drawing, 45.

Second year: lectures and recitations: elements of aëronautics, 20; mechanism, 75; metallurgy of iron, 15; mathematics, 90; physics and precision of measurements, 160; descriptive geometry, 45; applied mechanics, 45; literary subjects, 90. Drawing and laboratory: mechanical drawing, 150; physical laboratory, 30; mechanical laboratory, forging, 60.

Third year: lectures and recitations: theory of aëronautics, 45; construction of airships, 20; heat engineering, 120; mathematics, 30; applied mechanics, 75; hydraulics, 20; literary subjects, 120. Drawing and laboratory: aëronautic drawing and design, 165; physical laboratory, 15; engineering laboratory, 15; forging and chipping and filing, 90.

Fourth year: lectures and recitations: theory of aëronautics, 60; aërography, 30; dynamics of machines, 20; applied mechanics, 45; electrical engineering, 30; gasoline engines, 45; applied chemistry, 15. Drawing and laboratory: aëronautical design, 200; aëronautical laboratory, 90; engineering laboratory, 60; electrical engineering laboratory, 15; foundry, 30; machine tool work, 120; gasoline engine design, 90; thesis.

A CONGRESS OF TECHNOLOGY

Fifteenth Anniversary of the granting of the Charter to the Institute to be appropriately commemorated on April 10th

On the 10th of April next it will be fifty years since the act of the legislature granting the charter to the Massachusetts Institute of Technology was signed by Governor Andrew. In the half century that has elapsed the Institute has steadily advanced in power and influence, its graduates have taken a leading part in opening up the country, in developing its industries, in conserving the health of its citizens, and generally in adding to the national welfare by the application of scientific methods to the great practical problems of the day. In addition its educational policy has served as a model for numerous similar institutions in this country and abroad. It is therefore felt that the fiftieth anniversary of the granting of its charter is an event of more than local interest and that its celebration should be freed from all provincialism and made the occasion of emphasizing the benefits that have already been derived by applying science to industry and the still greater benefits that may be expected when all great problems are attacked in the scientific spirit and by the scientific method. For this purpose a Congress of Technology is to be held in Boston on April 10 and 11 and at this congress men of prominence from all parts of the Union are to give addresses, laying special emphasis on the saving of waste and the increase of efficiency that are due to science. Nearly all these men will be alumni of the Institute, and it is hoped that their united efforts will form an impressive demonstration of the power of the Institute's spirit to deal with the great practical problems of today and of tomorrow. With the active support not only of the alumni, but of other leaders of industry throughout the country, this congress should make a notable contribution to the advancement of applied science and the improvement of industrial efficiency.

RESULTS OF THE ALUMNI ELECTION

As a result of the recent vote Arthur Amos Noyes, professor of physico-chemical research at the Institute, has been elected president of the Alumni Association for the coming year.

The other officers elected are as follows: Vice-president, Frederick K. Copeland, '76, of Chicago, president of the Sullivan Machine Company of that city; secretary-treasurer, Walter Humphreys, '97, of Brookline (reëlected).

For the executive committee the following announcements were made: Frank W. Hodgdon, '76, chief engineer of the Massachusetts harbor and land commission, and Eugene C. Hultman, '96, consulting engineer and auditor, of Boston; for representatives-at-large, Oakes Ames, '85, president of the Lamson Consolidated Store Service Company at Boston; Harry E. Clifford, '86; Gordon Mackay, professor of civil engineering at Harvard University; Howard L. Coburn, '98, chief engineer of the Ambursen Hydraulic Construction Company of Boston; Willis R. Whitney, '90, director of the research laboratory of the General Electric Company of Schenectady, N. Y., and non-resident professor of theoretical chemistry at the Massachusetts Institute of Technology.

The term members appointed to the Corporation are Henry Howard, '89, Henry A. Morss, '93, and Arthur Winslow, '81.

Mr. Howard, who was a special student in chemistry, is vice-president of the Merrimac Chemical Company. He became identified with this concern immediately after leaving the Institute, first as a chemist, later as assistant superintendent, superintendent and vice-president. He is chairman of the executive committee of the Manufacturing Chemists' Association of the United States; chairman of the committee on public utilities, and member of the metropolitan improvement committee of the Boston Chamber of Commerce; member of the commission on the workmen's compensation, Commonwealth of Massachusetts; organizer and first chairman of the New England section of the Society of Chemical Industry; member of the Institute of Chemical Engineers; member of the American Electro-Chemical Society of the American Chemical Society.

Mr. Howard was treasurer of the Second All-Technology Reunion, and is now chairman of the committee on aeronautics appointed by the Alumni Council.

Mr. Morss, who is a brother of Everett Morss, also a term member of the Corporation, is a graduate in the course of electrical engineering. On leaving the Institute he entered the employ of The Simplex Electrical Company, and in December, 1903, became vice-president of that company. In January, 1905, was made director and vice-president of The Morss & Whyte Co., and in January, 1906, became a trustee of The Morss Real Estate Trust; he holds all of these positions at the present time.

He served as president of the class of '93 for two years, 1908–09; is a member of the Technology Club, and has been member of its council. He is member of the committee on aeronautics, appointed by the Alumni Council.

Mr. Winslow, who is a graduate in mining and geology, is identified with mining interests, being president and general manager of the United States & British Columbia Mining Co. and of the Liberty Bell Gold Mining Company. He was for some years after graduation assistant geologist of the Pennsylvania Geological Survey. He afterwards became a consulting engineer, devoting his attention wholly to examination of mines in Virginia, North Carolina, Arkansas and Missouri. He is the author of a number of reports and publications on geology and mining subjects. He was one of the managers of the American Institute of Mining Engineers and is a former president of the Colorado Mine Operators' Association. He is a fellow of the Geological Society of America.

October Technology Reviews Wanted

If any of our readers have an extra copy of the October REVIEW that they do not want, we shall be very glad, indeed, to receive it. Although we printed a very large edition of this number, we only have a few copies left and there are frequent calls for them.

A REMARKABLE SHOWING

What State Scholarships at Technology have done for Massachusetts Students

Twenty state scholarships were established at the Institute by act of the legislature in 1888, on the basis of an appropriation of $100,000, only ten being actually available in 1888–89. In 1895 the number was increased to 40 by an annual appropriation of $4,000 for the additional 20. Since that time the tuition fee has been increased to $250 per year, so that if the original grant yields 4%, the state now receives each year for its $8,000 what would cost individual parents $10,000, and what actually costs the Institute nearly $19,000.

The award of these scholarships has always been made by the State Board of Education on the basis of residence of the applicants, with due consideration of their need and merit. At first the demand for them was not greatly in excess of the supply. Of late years, however, the number of applicants has been so large that it has been the policy of the board to divide each scholarship in halves, leaving the applicant to bear the remainder unless assisted from other sources.

A review of the records shows that 412 persons had received state scholarships from their establishment up to and including the class of 1909, the average aggregate grant per student being thus about $315. Of these, 325 or nearly 80% have been graduated; of the 412 the addresses of 33 are unknown, and 13 have died; of the remainder 161 are residents of Massachusetts, most of them actively engaged in its industries. Of those in Massachusetts 23 are connected with the Institute, mainly as members of its Faculty; 15 are in the service of great engineering corporations, as the General Electric Company, the Telephone and Telegraph Company, the Fore River Ship Building Company, etc.; 18 are engineers; 7 architects; 8 chemists; 2 teachers; 3 lawyers; 9 are in the service of state commissions; 5 are superintendents in manufactories; 5 are managers; 2 treasurers, and 1 a president. Out-

side of Massachusetts, 19 out of 20 are in New England; 20 are in the service of the United States; 9 are professors in other colleges; 4 are in Mexico; 3 in Germany; 2 each in the Panama Canal Zone, Nova Scotia and China; 1 each in Porto Rico, Quebec, British Columbia, Scotland, South Africa, Chili, and Russia.

Without mentioning names of individuals, the list of former state scholars includes, for example, the assistant director of one of the most important research laboratories in the country, a professor of civil engineering in China, a superintendent of a great manufacturing establishment near Boston, the manager of an important manufacturing company in Scotland, the water-supply engineers of two of the larger cities of the United States, a leading civil engineer of Boston, a president of a great engineering corporation, and of a Canadian technical college.

It is difficult to see how the bounty of the state could have been used with greater advantage to its recipients or to the state.

In regard to the present situation, it may be added that there were for the present year 182 scholarship applicants, residents of Massachusetts, and that the amount which it was found possible to grant them was, in addition to the 80 half-scholarships of the state, $13,525. It is estimated that not less than $10,000, representing 40 additional scholarships would have been needed to meet the needs of thoroughly meritorious applicants.

An Appreciation from the Corporation

At the meeting of the Alumni Council held November 7, the following letter in regard to the Income Fund was received from the secretary of the Corporation of the Institute:

"At the last meeting of the Corporation of the Massachusetts Institute of Technology, the President made an informal report on the expenditures in successive years of the Alumni Fund, and it was voted that there be expressed to the alumni of the Institute the very high appreciation of the Corporation of their liberality in raising this fund which came at a most critical time and which has been of the greatest importance in the development of the Institute."

GENEROUS CONTRIBUTIONS COMING IN

Major Briggs' appeal for Athletics finds ready response—Un-named donor gives $2,000—To put Field in Prime Condition

Major Briggs, treasurer of the Advisory Council on Athletics reports that the total paid subscriptions to the athletic fund to date for the improvement of conditions at Technology field, amount to $2,673.50 given by 153 subscribers as follows: 1 of $1,000; 2 of $100; 5 of $50; 21 of $25; 35 of $10; 60 of $5; 1 of $3; 3 of $2.50; 13 of $2; 12 of $1. When Technology field was laid out, the corporation leveled the football field and practically built the track. The corporation was willing to go to the expense of building a fence around the track itself, but did not feel able to enclose the entire field, or to appropriate sufficient funds for observation stands, dressing rooms, bathing facilities and other needed appurtenances.

At this juncture, a friend of the Institute, not an alumnus, to whom credit is largely due for the development of outdoor exercise at Technology, made a generous offer of money for the improvement of Technology field. This gentleman, under the plea "that he wanted to do something for the boys; for the welfare and development of the student himself," told Major Briggs, then chairman of the Advisory Council, to go ahead and fix up the field, build a suitable grand stand with dressing rooms, baths, etc.; also an open field stand, and send the bill to him with the strict understanding that his name be not mentioned in connection with the matter. He recently wrote Major Briggs as follows: "You may call on me during the coming year for any sum you desire, not to exceed in all $2,000 for improvements in Technology field. It seems to me that the work you are doing is of real benefit to the Institute students for their future work in life and brings out certain powers and qualities which might otherwise not be as fully developed."

The contributions of the alumni as noted above are larger than they have ever been before, showing an appreciation of the results

of a sane and well-rounded athletic policy. Among the letters received is one from an alumnus in Colorado enclosing $10 which reads, " I take great pleasure in sending you my small mite towards the athletic fund, and wish I could subscribe a great deal more. The cause is a good one,—I wish every M. I. T. student could be *forced* to use the field."

The following comes from New York:—"When I look back upon the facilities which we had in the early nineties, I can quite see that the cost of living has gone up everywhere, even in athletics. At the same time, I take pleasure in enclosing you herewith my check for $25 and my best wishes for the success of the movement."

The advisory Athletic Council expended $680.79 last May and June for an addition to the portable house used as a dressing room, for doubling bathing facilities, etc. This expenditure came from the sum subscribed by the alumni, leaving a cash balance of about $2,000, which with the subscription of $2,000 from the friend mentioned above, makes about $4,000 on hand. The Advisory Council will need the entire sum of $5,000, to place Technology field in good working condition, and before beginning on this work, wants to see that amount of money in hand. Undoubtedly many friends of athletics who have not before realized what the development of athletics has meant to Technology, will feel it a privilege to help swell the fund to the needed amount.

How Non-Resident Alumni Can Help

The committee on State Aid is doing very effective work in bringing before the legislators the value of the Institute as an asset of the state of Massachusetts. There may be a number of men outside the state who have personal acquaintance with members of the legislature. Such men can be of much service in showing what the Institute stands for in general and how it is conserving the industrial resources of Massachusetts.

There are over 3,000 former Technology students living in this state. If our law-makers could really know the real value of these men to the Commonwealth there would be no hesitancy in giving the Institute generous support.

TECHNOLOGY HIGH IN PURE SCIENCE

From Some Points of View It Leads all Other Institutions

The biographical directory of *American Men of Science*, edited by Professor Cattell of Columbia University in 1903 has just been reissued and an interesting comparative study of the changes from 1903 to 1910 has been published by the editor. Some of the facts brought out are of particular interest to Technology men.

It should be noted at the outset that the statistics given relate wholly to the advancement of science, so that some of our strong engineering departments are not represented. Again, the comparison of institutions is to a large extent the comparison of graduate departments since it is these which bear the closest relation to the advancement of science. Under these conditions it is, therefore, particularly gratifying to find that in chemistry the Institute "easily leads" all the colleges and universities of the country, and that in the pure science departments of physics and mathematics, where graduate work is not yet developed, it stands sixth and ninth, respectively.

The institutions which have made, since 1903, the largest gains in the total number of their leading scientific men are: Harvard, 14; Wisconsin, 12; Chicago, 10; Yale, 8; the Institute of Technology and the Carnegie Institution, 7 each. The total present numbers are: Harvard, 79½; Columbia, 48; Chicago 47½; Yale, 38; Cornell, 35; Johns Hopkins, 33½; Wisconsin, 30; M. I. T. 25, etc., fractions representing part-time service. The only other technological institution having three or more is Worcester, with just that number.

In a comparison with certain other educational factors, it appears that the Institute has one of the leading scientific men for every ten members of its instructing staff; Harvard, one in eight; Yale, one in eleven, etc.

In comparison of the number of scientific leaders with the value of its real estate, the Institute stands first, with one for each $53,000 of property. Harvard has one for each $138,000, while

certain institutions near the other end of the list are credited with more than $600,000 for each scientific leader.

In the proportion of scientific men to current income, the Institute is again near the head of the list.

There are six more graduates of the Institute in the leading thousand scientific men now than in 1903.

One Teacher to Every Seven Students

The *Bulletin* of the Society for the Promotion of Engineering Education for October and November contains interesting notes on the German technical universities by Dean Shepard of the L. C. Smith College of Applied Science of Syracuse University. On one statistical point it seems likely that Dean Shepard's information is defective, namely: the numerical ratio of teachers to students, which he gives as averaging for the six German institutions 8.8 students per teacher, the extremes being 5.2 in Dresden and 16.5 in Munich. Dean Shepard expresses doubt if there is any American engineering college that has as large a faculty in proportion to its student body as is shown by these figures. A reference to the special bulletin of the Carnegie Foundation on the financial status of the professor in America and in Germany shows, however, that at the Institute there are only 6.7 students per teacher, at the Worcester Polytechnic, the Armour Institute of Technology, and the Stevens Institute slightly more than 10.

New Associate Members

The following former students were elected associate members of the Alumni Association on the dates indicated:—

November 28, 1910: Charles Edwin Belcher, '93; Samuel Pomeroy Colt, '74; Frederick E. Hill, '82.

December 22, 1910: Harry D. G. Baxter, '10; Tyler W. Carlisle, '10; Benjamin Hammond, '09; Benjamin Shuman Hirschfeld, '10; Ruth Ogden Pierson, '09; Paul Ellis Thompson, '10; James Gregory Tripp, '10.

STATE AID GIVEN BY OTHER STATES

In a comparison of the amounts appropriated by different states, in 1909, for the support of universities, colleges and technological schools, Massachusetts ranks somewhat below South Dakota and Oklahoma in the *total* amount spent, and spends only about one sixth as much as the great commonwealths of the north-central group,—Minnesota, Michigan, Wisconsin, and Illinois. A fair comparison must, however, take account of the wealth of the state. Taking as the latest available figures the estimated wealth in 1904 and the average appropriation for the four years 1906–1909, it appears that Massachusetts contributes annually to higher education only $29 for each million of its wealth. The only state which is less liberal than Massachusetts is New Jersey, which appropriates $16 per million per year. New York gives $44, Connecticut $38, Pennsylvania $49, Delaware $39, Tennessee $45. No other state gives less than $50, and the average for the entire country is about $150. Near the other end of the scale are:

Oklahoma,	$336	South Carolina,	$432
Colorado,	308	Nevada,	403
Utah,	455	Washington,	646
Wisconsin,	314		

While the high ratio in some of the Western States naturally represents in part expenditure for a new plant, it is evident that some of the Eastern States, including Massachusetts, are leaving their higher education to depend too much on the generosity of private benefactors and abnormally high tuition fees. Whatever may have been the case in the past, this policy is no longer safe.

Moreover, it is to be noted that of the small contribution made by Massachusetts, nearly the whole is devoted to agricultural education. Without questioning that this share is all needed and excellently used, it would appear that the dependence of the state on its manufactures and commerce is such as to require more adequate support for education in engineering and other forms of applied science.

PRESIDENT MACLAURIN ON COOKE'S REPORT

A reply written at the request of the Editor of the New York Tribune that reduces the "Student Hour" to an absurdity

The latest bulletin of the Carnegie Foundation has many attractive features. The report has evidently been made up in a spirit of good will to education, and any sting that it may contain should be removed by the admirable introduction by Doctor Pritchett. In the course of more than a hundred and thirty large pages the author, Mr. Cooke, makes a number of excellent suggestions, which are none the less excellent because of their lack of novelty. He is aware that the charge of Philistinism might easily be suggested by the tenor of his remarks, and he makes some effort to protect himself accordingly.

His peculiar point of view seems to give undue prominence to "the cost per student hour," but although we hear much of this phrase in the report we are distincly told in one place that "it should be borne in mind that the cost per student hour has absolutely no value in distinguishing relative educational values." If this had been placed as a headline to all the pages it would have greatly improved the value of the report and would have been in harmony with this other admirable sentence, which might with equal propriety have been inserted as a footnote to every page: "In the last analysis the usefulness of a university is the measure of its mental, moral and spiritual product—and product interpreted as broadly as you please."

Although there is much that is excellent in the report, it has many weaknesses. It is written from the point of view of the man who is used to report on the efficiency of a glue factory or soap works. Whenever it touches the strictly educational field and gets away from the soap factory the trail of the amateur is over it all. It is full of commonplaces, and there is scarcely a question raised that has not been discussed *ad nauseam* by college professors and other officers. It is not lacking in confidence. One marvels at the temerity even of an "efficiency engineer" who can lay

down the law so definitely as to how to teach physics, how to conduct a recitation, how to carry on research, when most of us who have devoted our whole lives to such problems are far less confident.

There are, however, here and there some pleasing evidences of diffidence. In discussing the important educational problem of janitor service Mr. Cooke says, "a sharp line should be drawn, probably, between the cleaning of the buildings and the care of apparatus." The use of the word "probably" is a master stroke. It conjures up pleasing pictures of janitors handling the delicate instruments of a physical laboratory just as they furbish the brass plates of a glue factory—if, indeed, "the snap and vigor of the business administrator" which Mr. Cooke admires so much should decree that such things are a necessary adjunct to the dignity of the factory.

Almost on a par with this use of "probably" is the statement that "there is a good deal of the feeling that lectures to be good must in a way bear the marks of the inspiration of the moment. But a good many men who have the reputation of being high authorities assured me that the carefully thought out plan for a series of lectures would win out every time over the inspiration of the moment idea." Of course, they assured Mr. Cooke of this, but they must have smiled at the naïveté of the question and wondered whoever suggested that the presentaton of a scientific subject be left "to the inspiration of the moment."

The report shows many evidences of ignorance of educational history. It suggests as novelties plans that have been tried for centuries and abandoned only after most careful consideration. Such, for example, is the suggestion that the rules for the conduct of the students and the punishments for their breach should be put into precise form. The collection of such rules from the archives of the older universities would fill many volumes. Again, he says: "It may turn out that ultimately the matter of examinations will be handled by an agency outside of the department." This, to his vision, is a far-off divine event to which the whole educational creation is moving. If so, it is moving backward.

Mr. Cooke's remarks on the economic use of rooms and buildings are mostly eminently sensible, although he contributes nothing new to the discussion of a very old problem. His economic sense is shocked on learning that a lecture room in the depart-

ment of physics is used only four hours a day, just as it must be shocked when a church is used only a few hours a week or a life belt only when it is actually needed. In some of his criticisms under this heading he seems to forget that colleges have to make the best of the materials that are available, and that in many cases an apparently uneconomic use of rooms is forced upon them because their buildings are old or were designed for other purposes than those to which they have now to be put. He commends one institution for a space-saving device and wonders that it is not adopted in all departments, the fact being that the newer buildings were designed for its use, but the older ones were so constructed that its adoption there would not have been a real economy.

Mr. Cooke displays unusual weakness when he takes up the subject of research. Indeed, most of what he says on this subject must be received with that mixture of astonishment and embarrassment with which we listen to the words of a distinguished friend who pronounces an absurd judgment on an important subject that he has evidently not mastered. Listen to this: "I believe there is a distinct disadvantage to undergraduate students to be near research work. I think in the case of physics research workers, their good influence is more than offset by the introduction into the undergraduate laboratories of the necessarily deliberate and experimental methods of the research laboratory." How unfortunate if "deliberation" and the "experimental methods" should contaminate the laboratories—it might detract from the "snap and vigor" of these promising undergraduates. And yet one wonders what possible use there can be in teaching physics at all if so much care is to be taken to guard the students from catching its spirit and grasping its method. We, in our ignorance, had imagined that the method and the spirit of science were its very essence, especially where undergraduate learning is concerned. We should have accounted any system of education that failed to recognize this as but so much dross and dung (if, at this season, a Scriptural phrase may be permitted), even if it resulted in every undergraduate gaining 100% in the examinations conducted by Mr. Cooke's "bureau of inspection."

Perhaps enough has been said to indicate that there are serious blemishes in this bulletin. If, however, it be taken for just what

it is worth, it can do no harm and may do much good. We should regard as a friend every one who helps us to improve our methods, and if this report enables us to keep our accounts better, or make a more economical use of our machinery, of course it will be heartily welcomed. The most serious objection that I see to it lies in its abuse rather than its legitimate use. I fear that it will tend to increase the administrative machinery of our educational institutions, machinery that is already far too much in evidence. When one listens to all the criticism of our colleges and thinks of the great things that have been accomplished elsewhere with so little machinery and so little noise, one wonders whether it might not be better for us also to settle down to quiet work.

Then I confess that all this talk of cost a student hour strains my patience to the limit, especially when it is presented under the heading "gauge of efficiency." Mr. Cooke frankly recognizes its uselessness to this end, but others may be led astray by the specious analogy with the workings of a factory. Already there are plenty of forces at work to give sufficient prominence to mechanical conceptions and mechanical tests. It does not require any special effort in this country to stimulate admiration for the "snap and vigor of the business administrator," and the value of snap in the domain of education may very easily be overestimated. Especially am I fearful of its effect on the teacher and the investigator. His path is not too smooth already, and even now there are many forces drawing him from the educational sphere where best he can serve society. Think for a moment of the effect on men like Newton or Faraday of the "snap and vigor" treatment that Mr. Cooke suggests in his discussion of research. They must make frequent reports on the progress of their research and constantly justify the expenditure thereon. The superintendent of buildings and grounds, or other competent authority, calls upon Mr. Newton.

Superintendent of Buildings and Grounds—Your theory of gravitation is hanging fire unduly. The director insists on a finished report, filed in his office by 9 a. m. Monday next, summarized on one page, typewritten, and the main points underlined. Also, a careful estimate of the cost of the research a student hour.

"Newton—But there is one difficulty that has been puzzling me for fourteen years, and I am not quite—

Superintendent of Buildings and Grounds (with snap and vigor)—Guess you had better overcome that difficulty by Monday morning or quit.—*New York Tribune*, December 25.

The Average Age of Our Alumni

The present size of the Institute, and the large number of its alumni, may easily give an erroneous impression in regard to their industrial efficiency and financial strength. Since the earliest class was graduated forty-two years ago, it might be supposed that a still larger number of graduates than is actually the case would now occupy conspicuous positions in the industrial and financial world. The factor which is easily overlooked in this connection is the rapid increase in the size of classes and the consequent low average age of the graduates. The total number of graduates (Bachelors of Science), up to 1909 inclusive, was 4,318, of whom 4,107 were living. Of these more than half have received their degrees during the ten years 1900–1909. The average length of time for all the graduates since graduation is only a little more than eleven years. Taking 23 as the average age at graduation, the average age of all the graduates would thus be only 34 and a fraction. The men who have been out as much as twenty years, with corresponding opportunity for achievement, number only about 550.

The '01–'10 Luncheon Club

The classes from 1901–1910, inclusive, held a joint smoker at the Tech Union on the evening of December 23. Although it was held just before Christmas nearly a hundred men turned out and enjoyed a very pleasant evening. It was decided to hold weekly luncheons at the Rathskeller of the American House every Friday from 12.30 to 1.30, the first meeting to begin December 30. For the present these luncheons will be informal and Tech men of these classes can drop in any time during the hour. No general notice has been sent out by mail, those present volunteering to tell their classmates of this luncheon arrangement.

A LIVELY WINTER PROGRAM

Local Alumni Associations Active—Weekly Luncheons at Providence—Pittsburg Club Serenades Purdue and Cornell—New York Banquet January 21

TECHNOLOGY CLUB OF BUFFALO.—The season opened with a rousing dinner at the Buffalo Club on October 19, twenty odd members present.

Deacon Shed, who had been working his muse overtime for several weeks uncoiled himself from several yards of quatrains, sonnets and limericks (he was very strong on the latter). The burden of his song was "Who hit Henry Boyd with a wet towel."

Professor Morgan of the University of Buffalo, Canisius College and the Grosvenor Library next touched lightly on everything disreputable in the past careers of the members present.

The old favorites were sung over and over until the pianist refused further encores on "Queenie."

After adjournment two bowling teams captained by Frank Lane and Carl Houck played for the Club Championship, Lane's team winning. Houck's team was superior in the vulgar technique of the game, but Lane showed his Tech training when it came to working higher mathematics on the score sheet.

The next meeting will be a Christmas celebration on December 23 at the Buffalo Club. Frank Lane by virtue of his paunch will act as Santa Claus.—*W. H. Watkins*, '95, *Secretary, P. O. Drawer 57, Buffalo, N. Y.*

THE PITTSBURG TECHNOLOGY ASSOCIATION.—The association held its second smoker of the season, at the University Club, on Saturday evening, November 19. Although we have had smokers and smokers, they all fade into insignificance when compared with the Tech spirit, enthusiasm and novelty of this one. All business was dispensed with and the entire evening was devoted to social divertisement. The star performance was presented by Sumner B. Ely, '92, who exhibited the most wonderful card, coin and ring tricks producing an entire landscape and menagerie from the im-

maculate recesses of his evening suit and in general presenting a most mystifying exhibition which cast Keller and Hermann far into the shade. When we say that Ely is a better president of the association than prestidigitator, the reason for the wonderful success of the association is explained. There were forty in attendance, including members from the class of '87 down to '10. Eighteen different years were represented. After the arranged program had been carried through, each member arose and spoke for himself. During the "interims" we smoked, filled our steins and sang the old songs of Technology. While our festivities were at their height, it was suggested that we visit our brother collegians of Purdue and Cornell who were holding meetings in other parts of the University Club. With stein in hand and a ringing song, we visited the two college gatherings and after exchanging felicitations, returned to our quarters. Our two groups of friends in true college spirit returned our call at once and such a gathering has not occurred in Pittsburg for many years. First Tech was cheered, then Purdue, then Cornell, and then they were all cheered together. There were about one hundred and twenty-five men present and all joined in a toast to the memory of Bullard, '87, and with uplifted stein, sang lustily the Stein song. The scheme which we have been carrying out of giving free smokers has worked so well that we suggest it to other alumni associations. The amount of expenditure is not large and the funds are provided by our Guarantor Association. This plan gives every one of the boys, no matter what his circumstances are, an opportunity of getting together and becoming acquainted. A hearty invitation is extended to Tech men who may be in this vicinity to meet with us at any of our gatherings. If in town, call up the secretary and let us get a line on you. The officers for 1910 are: President, Sumner B. Ely, '92; vice-president, Henry D. Shute, '92; secretary-treasurer, Waldso Turner, '05; executive committee, Fred Crabtree, '89, Warren I. Bickford, '01, and L. K. Yoder, '95; alumni representative on the council, H. H. Rapelye, '08.—*Waldso Turner, '05, Secretary-Treasurer, 1174 Frick Building Annex, Pittsburgh, Pa.*

Technology Club of Rhode Island.—The Technology Club of Rhode Island held a smoker in the rooms of the Providence Art Club, No. 11 Thomas Street on the evening of Saturday, December 3.

One hundred and thirty-five notices were sent out and sixty-five replies were received, fifty of these accepted and forty-five attended.

A short business meeting preceded the social entertainment at which President James G. Woolworth, '78, presided. Several minor changes were made in the constitution which was adopted several years ago by the earlier Tech Club of Rhode Island and it was voted to accept it for the present organization. The suggestion of the executive committee that the Tech men in Providence try to lunch together one day in each week was received enthusiastically and it was voted to fix Thursday, December 15, as the date of the first luncheon.

The luncheons are to be held at Brucker's Hotel, 317 Westminster Street at 1 p. m. and any Technology man who is in Providence on any Thursday will be sure to find a hearty welcome if he will drop in. The cost of the lunch is fifty cents.

An entertainment followed contributed by members of the club and by several outside amateur entertainers.

Professor Homer, '85, and Dr. W. Louis Chapman, '95, provided the musical numbers on piano, flute and cello. J. H. Cady, '06, sang and H. H. Clark, '98, gave several amusing recitations.

A unique burlesque musical number by Henry B. Chase, and a sleight of hand performance by John Percival concluded the prepared program. Beans, spaghetti and crackers and cheese occupied everyone's attention for a while and the social side of the meeting was well attended to.

The committee feel that the Technology Club of Rhode Island has been roused from its lethargy and if the lunches prove to be well attended the M. I. T. men in this vicinity will be better acquainted before very long. An attempt will be made to get all the members of the club to attend the basket ball game between Brown and Tech which we understand takes place in February. The president was authorized to appoint a member of the executive committee. President Woolworth named Lewis D. Nisbet, '09. The member of the Alumni Council is Prof. E. B. Homer, '85.—*William C. Dart, Secretary,* 148 *West River Street, Providence, R. I.*

Technology Club of Puget Sound.—The following men met at the Hotel Butler on Saturday evening, November 19, for dinner: A. W. Sawyer, '72; Frank Dabney, '75; H. H. Plummer, '85; C. H.

Alden, '90; M. W. Greer, '91; A. J. Farnsworth, '94; H. M. Loomis, '97; A. C. Lawley,'97; W. S. Matheson, '99; C. M. Lewis, '99; E. G. Allen, '00; W. J. Sayward, '01; S. A. Gardner, Jr., '02; J. R. Morse, '03; G. B. Harrington, '04; L. A. Wallon, '04; L. T. Bushnell, '05; S. T. Hyde, '05; T. P. Moorehead, '05; C. M. Simmers, '05; E. S. Manson, '06; Q. P. Emery, '06; S. J. Egan, '07; E. F. Whitney, '07; J. H. Walsh, '07; and A. G. Place, '08.

After dinner, President Dabney reviewed the life of the club from the time of the first gathering in 1904 through the formal organization in November, 1908, when Dean Burton was present to the gathering of the evening. He then called on Mr. Sawyer who responded with a few well-chosen words on the "M. I. T." in the early days. Following Mr. Sawyer, Mr. Hyde spoke on the Reunion of 1909; Mr. Lewis, on The Portland, Oregon, Club; Mr. Sayward on the College Club which is being formed in Seattle; Mr. Bushnell read some advance copy of the *Technology Review;* and the secretary read a very enthusiastic and encouraging letter from Mr. I. W. Litchfield, '85, giving much interesting data concerning Tech and its doings, announcing that we will be able to have the moving picture films of the 1909 Reunion to show at the next meeting and suggesting that we appoint a representative to the Alumni Council.

It was moved and unanimously voted that we appoint Mr. I. W. Litchfield, '85, to represent the club.

The club proceeded to the annual election of officers. Frank Dabney, '75, was unanimously reëlected president, and L. A. Wallon, '04, was elected secretary.

C. M. Lewis then called to the attention of the club the fact that the advantages of other colleges were presented to the high schools of the city and suggested that we take steps to have the great advantages of M. I. T. presented to the high schools of Seattle and Tacoma. The president was authorized to appoint a committee of five to take up the matter and make the proper arrangements and get together the proper data to be presented.

The club then adjourned to the piano, E. G. Allen presiding at the "box," and joined in songs and a good old cheer for M. I. T.—*L. Arthur Wallon, Secretary, Seattle Electric Company, Seattle, Wash.*

Technology Club of Philadephia.—The season of the Technology Club of Philadephia was opened on Saturday evening, November 5, when a smoker was held at the Southern Club. The attendance was large and included several members of the last graduating class. Tech music was enjoyed and light refreshments were served. Mr. James Swan, '91, told in a very interesting manner of his recent trip to Turkey.

The next smoker will be held on Thursday, December 15, at the Southern Club. Mr. Saccerdoti, resident engineer of the American-Laurenti Submarine Company, will speak on the "Laurenti Submarine." All Tech men, especially new arrivals in Philadelphia, are urged to get in touch with the club.—*Percy E. Tillson*, '06, *Secretary*, 223 *So.* 61*st St.*, *Philadelphia*, *Pa.*

The Technology Club of New York.—The annual dinner of the club at Hotel Knickerbocker, Broadway and Forty-second Street, on Saturday evening, January 21, is the event prominently in the minds of Tech men in and around New York. All Tech men are invited and it will be the occasion of bringing here many men from up state, as well as from Philadelphia, New Jersey, Connecticut and Boston. Like all dinners of college men in New York, it is being more widely recognized every year as requiring the attendance of all alumni for miles around who can possibly be present, as it affords a splendid opportunity in the most pleasant environment for annual reunion of classes, for keeping in touch with *alma mater* and for advancing her cause. The New York Tech dinner, is "in the public eye" and all business and other responsibilities are then to be laid one side for a magnificent and unanimous testimonial to the Institute and a fine good time. The banquet hall of the Knickerbocker in its new and elaborate decorations, will welcome the largest gathering of Tech men ever held in New York and every detail contributing to a thoroughly enjoyable dinner is being arranged by the various sub-committees. President Maclaurin will be our principal guest and we shall also have addresses from other men of prominence. Tickets at four dollars each will be mailed upon receipt of request for reservations addressed to "Dinner Committee, 17 Gramercy Park," and such requests should be sent promptly to facilitate the work of the committee in making seating arrangements.

Meanwhile members are enjoying the smoke talks at the club

house arranged by F. C. Schmitz, '95, chairman of the entertainment committee. On November 28th the good fellowship of the smokers was enjoyed by between 150 and 200 men when "The Bunch," furnished through the courtesy of Peerless Rubber Manufacturing Company, *Power and the Engineer*, Jenkins Brothers, Manning, Maxwell & Moore, etc., comprising six or eight talented entertainers, amateurs with professional ability, gave us a splendid evening of clever songs and stories which put and kept everyone in smiling good humor. A number of '10 men met that evening and thereupon planned for a class dinner which has since been enjoyed by fourteen members at the club house; '95 also had a pleasant class dinner there recently and the committee on class reunions in the December *Bulletin*, made the following announcement: "Any man of any class can start a dinner by obtaining at the desk a list of members and the stamp for notices and informing the house committee. The club is the place and the opportunity. Special dinners will be arranged on request."

On smoker nights the tables are generally engaged in advance and at the last smoker, forty-eight men dined at the club. The announcement for the December smoker, contained the following: "At the club house, Tuesday evening, December 20, 1910, at 8 p. m., Mr. Elmer A. Sperry will talk to us on 'The Gyroscope' illustrated by lantern slides and running models. We had a bully time at the last smoker and those who were not there missed something. Don't make it a double regret by missing this one. Come and see your old friends. They will all be there."

For the library committee, Floyd Taylor, '03, chairman, announces the nucleus of a reference library including text-books used at the Institute, for many of which, grateful acknowledgment is made to donors, and that new magazines have been added and the table is lined nightly with readers.

At the club, the house committee is maintaining excellent service and pool and bridge tournaments will soon be organized to compete for cups offered by the board of governors.

The annual meeting at the club house, February 4, when seven new governors are to be elected, will have a large attendance, especially as it is announced that the business of balloting and rendering reports will be enlivened by the "Plantation Darkies" who gave us such a jolly evening last spring, with songs and "infinite jest and merriment."

The membership box office is open and the glad New Year of opportunity is at hand. As was well said by the Technology Club of Boston in the last REVIEW, "If you are a member, come and use the house as much as possible. If you are not a member, application blanks may be obtained from any of the officers."—*William H. King, '94, Chairman Publicity Committee, 17 Gramercy Park.*

THE TECHNOLOGY CLUB OF THE MERRIMACK VALLEY.—The club is planning for a special observance at the annual meeting early in February, 1911, of the tenth anniversary of the formation of the society. Nothing definite has as yet been decided upon: it is very possible that President Maclaurin will be a guest of the club on that evening.—*John A. Collins, Jr., '97, Secretary, 67 Thorndyke St., Lawrence, Mass.*

Technology and Industrial Education

At the fourth annual convention of the National Society for the Promotion of Industrial Education which was held in November, Technology was well represented. The president of the society was Charles R. Richards, '85, director of Cooper Union, New York City. Among the speakers were Tracy Lyon, '85, assistant to the first vice-president of the Westinghouse Electric & Manufacturing Company of Pittsburg, who described the apprenticeship course of that company, and George M. Basford, '89, assistant to the president of the American Locomotive Company, of New York City, who described the apprenticeship system of the company he represented. Frederick P. Fish of the Corporation made an unusually able address at the banquet tendered by the Chamber of Commerce. Mr. James P. Munroe, '82, was elected president for the coming year. Among other Tech men who took part were Walter B. Russell, '97, director of the Franklin Union, Boston, and Arthur L. Williston, '89, formerly director of the Department of Science and Technology at the Pratt Institute, Brooklyn, and who has recently become the head of the new Wentworth school of Boston, and others.

EIGHTH MEETING OF THE ALUMNI COUNCIL

Discussion in Regard to Dues—Summer Camp of Civil Engineering Requires $25,000—Committee on Congress of Technology

At this meeting held on November 7th, at the University Club in Boston, there were thirty-one members present.

The eighth meeting of the Alumni Council was marked by several informal discussions that took place and it was one of the most satisfactory meetings that the council has held. Much seems to be gained by these informal discussions.

A report made by the executive committee on the change in the form of the publication of the REVIEW was announced, and in place of the four magazine numbers it is to be published monthly for nine months during the year, beginning with the January number.

The executive committee reported that it is of the opinion that representation of classes on the council is of such a character that it cannot be delegated, but the committee respects the sentiment of any class or society that desires continuous representation.

The resignation of Major Briggs as a member of the advisory council on athletics was announced, and also the appointment of Dr. Allan W. Rowe to fill his place. The resignation of Major Briggs was accepted in view of the fact that he has consented to act as treasurer of the advisory council on athletics.

The formal thanks of the Corporation to the alumni for the Income Fund which has been received during the past five years was read and is printed elsewhere.

A report of the discussion of the financial standing of the association by the executive committee was presented. Considerable time was given by the council to this question and the suggestion that the dues be raised was seriously considered. It is the opinion of the executive committee that rather than raise a fund for the association among a few, it is far better to have the expenses paid from the smaller contributions of many. The committee

is of the opinion that the expenses of the association are appropriate and should not be curtailed in their respective directions. It is to be noted that during the past year only about 57% of the members of the association paid their dues. It has, however, been increased during the past three years from 38%. It is hoped that with the change in the form of the REVIEW and the spreading of Institute news and word about the work of the Alumni Association more quickly and more generally than has been possible a marked change in the percentage of those who pay their dues will be made. The matter of the financial standing of the association was referred back to the executive committee to report at the next meeting of the council.

Further report was received from the committee on the Congress of Technology, and a letter was read from President Maclaurin, and at his suggestion the present committee was asked to nominate three to represent the alumni on the general committee, which the President of the Corporation has been authorized to appoint. This committee, besides the President, who is chairman, is to have three members from the Corporation, three from the Faculty of the Institute and three from the Alumni Association. For the Alumni Association Messrs. Little, Fay and Robb have been appointed.

The committee formerly appointed to consider the establishment of a camp for the summer school of surveying made a special report of progress to the effect that a member of the Institute Faculty had been delegated by this committee to inspect the proposed sites for the camp. The committee now realizes that $25,000 will be needed to establish such a camp, and at their request they were authorized by the council to raise, in the name of the association, among graduates of the courses to be benefited, the necessary money to start the work.

An informal report was received from the committee on engineering research and as the report contained no recommendations that could be presented to the Corporation, and because the council purposes to have each new administration free in the appointment of all such committees the report was laid upon the table and the committee excused.

The council adjourned to meet January 2d when the annual meeting will be held.

Those present at this meeting were as follows:—President, A. F. Bemis, '93; secretary-treasurer, Walter Humphreys, '97; members of the executive committee, William S. Johnson, '89; Charles F. Park, '92; George W. Swett, '03.

Latest living ex-presidents: Walter B. Snow, '82; Everett Morss, '85; Frank L. Locke, '86; Edwin S. Webster, '88.

Representatives at large: A. D. Little, '85; J. P. Tolman, '68; Allan W. Rowe, '01.

Class representatives: '68, Robert H. Richards; '81, John Duff; '84, H. W. Tyler; '85, I. W. Litchfield; '86, A. A. Noyes; '89, Jasper Whiting; '91, Charles Garrison; '92, Leonard Metcalf; '93, Frederic H. Fay; '94, S. C. Prescott; '95, A. D. Fuller; '97, C. W. Bradlee; '99, H. J. Skinner; '00, Ingersoll Bowditch for N. J. Neall; '05, G. DeW. Marcy; '08, H. T. Gerrish.

Representatives of local societies: Technology Club of Merrimack Valley, John C. Chase, '74; Technology Club of New York, Francis C. Green, '95; Northwestern Association M. I. T., Washington Society of the M. I. T., and Technology Club of Milwaukee, by I. W. Litchfield, '85; Technology Club of Rhode Island, E. B. Homer, '85.

WALTER HUMPHREYS, *Secretary-Treasurer.*

The Monthly Review

The REVIEW for February, although having the same size page as the magazine numbers, so that they may be bound together, will have larger type pages with double columns. There will be no departments and no class news as such, the class news being confined to the magazine numbers. Please understand, however, that anything of importance connected with the classes or local Associations should be sent in for publication in the current REVIEW, while it is fresh. By this we mean all news relating to class reunions, dinners, or happenings of importance to members of the classes. Each item of news will be given a separate heading.

Material for the February REVIEW should be received on or before the 15th of January. In case happenings are to occur a few days after this date, kindly let us know, so that we can reserve space and thus insure their appearance.

CLASS SECRETARIES REORGANIZE

New By-Laws adopted—To Co-operate with Council and bring Classes into closer Relations

A reorganization of the Association of Class Secretaries was effected at the fourteenth annual meeting held at the Technology Club, Boston, November 13. Since the Alumni Council was instituted many alumni activities such as commencement and reunion festivities and the publication of THE TECHNOLOGY REVIEW formerly undertaken of necessity, by the class secretaries as the only representative body of alumni, have been carried on by the Alumni Association under the direction of the council. A year ago the question was raised as to whether the Association of Class Secretaries should not be dissolved in view of the fact that the Alumni Council contained in its membership representatives of all classes and most of the local alumni organizations, and at that time a committee was named to report at the 1910 meeting upon the question of continuing the association. This committee consisting of Dr. H. W. Tyler, '84, chairman, Walter B. Snow, '82, A. F. Bemis, '93, Frederic H. Fay, '93, and G. DeW Marcy, '05, reported as follows:

The committee is unanimously of opinion that the association should not be discontinued, for the following reasons:

The existence of the association has in the past been abundantly justified by the results it has accomplished. Its organization has been simple, economical and efficient.

The Alumni Council will naturally be responsible in future for many matters which have been heretofore dealt with by the association. On the other hand there is ample work for both, and it seems to the committee entirely feasible for the two bodies to share this with mutual advantage, the council concentrating its attention on the larger questions of general policy, the association dealing with others. Matters not clearly belonging to one rather than the other might naturally be dealt with by joint committees. The council would refer appropriate matters to the association, and conversely.

Any possible conflict or duplication would be obviated by the fact that the two bodies would have a considerable proportion of members in common. On the other hand the larger classes would choose men of somewhat different type as their representatives in the two bodies. The best man for class secretary will

often not be the best man for dealing with the broader questions which come to the council. Both types are needed, and both should be organized.

The representation of undergraduate classes in the association seems to the committee an additional reason for continuing it.

The committee recommended changes in the by-laws which were adopted; in the main they consist of the elimination from the membership list of representatives of the Faculty and of the local alumni organizations, the latter now being given representation in the Alumni Council, and in the establishment of an executive committee to look after many details of the association's work in the interval between general meetings, the duties of this committee being similar to those of the executive committee of the Alumni Association. The following are the amended by-laws now in force:

Article I. Name. This organization shall be known as the Association of Class Secretaries of the Massachusetts Institute of Technology.

Article II. Object. The object of this organization shall be to foster and maintain closer relations among all Institute classes, to systematize all matters pertaining to organization and record, and to coöperate with the Alumni Council in matters affecting the welfare of the Institute.

Article III. Headquarters. The headquarters of the association shall be the Technology Club.

Article IV. Membership. The membership shall consist of the secretaries of all graduate classes, the president and the secretary of the Alumni Association, a representative of the committee on publication of THE TECHNOLOGY REVIEW, the secretaries of the four undergraduate classes of the Institute, and the president of the Institute committee. In case a class is without a properly constituted secretary a representative of that class shall be called upon by the secretary of this association to act as representative for said class until such class secretary is appointed. Any class secretary unable to be present at any meeting, shall appoint a member of his organization as his representative, and to said representative shall be accorded all the powers which would be exercised by the secretary if he were present.

Article V. Officers and Committees. Section 1. The officers shall be a secretary and an assistant secretary. The secretary shall also perform the duties of a treasurer. They shall be chosen by ballot at the annual meeting in each alternate year and shall hold office until their successors have been elected and have accepted office. In case of death or resignation of the secretary the assistant secretary shall immediately become secretary and shall hold the office for the unexpired term. The secretary, or in his absence the assistant secretary, shall call all meetings to order and shall preside until a chairman is chosen.

Section 2. There shall be an executive committee consisting of the secretary, the assistant secretary, and three other members. This committee shall have power to fill vacancies, and to act in general for the association to which it shall

make a report annually. The three members of this committee other than the officers shall be chosen at the annual meeting in each alternate year to serve for two years or until the election of their successors.

Article VI. Meetings An annual meeting shall be held in November of each year. Other meetings may be called by the secretary, and must be called upon the written request of three members.

Article VII. Amendments. These by-laws may be amended at any meeting by a two-thirds vote of the members present except that no amendment may be adopted which has failed to secure at least seven affirmative votes.

The officers of the association, Frederic H. Fay, '93, secretary, and I. W. Litchfield, '85, assistant secretary, were reëlected for the ensuing two years term; and J. A. Rockwell, '96, N. J. Neall, '00, and R. R. Patch, '06, were chosen to serve with the officers on the executive committee.

The Institute's needs and the work of the legislative aid committee were set forth by J. W. Rollins, '78, chairman, H. W. Tyler, '84, secretary and A. F. Bemis, '93, of that committee; and after full discussion, in which many suggestions were offered for bringing the Institute's case to the attention of the legislators, the association voted to coöperate to the fullest extent with the legislative aid committee.

Twenty-five men were present at the meeting at which Prof. R. H. Richards, '68, presided.

Alumni have Contributed Generously

The annual report of the treasurer of the Institute shows a most encouraging condition from one point of view. During the past five years the alumni have contributed toward general expenses $206,665.15. They have raised the Walker Memorial Fund of $125,501.97 to be used for the building of a student social center, they have raised $7,357.72 for an Improvement Fund, they have made the present Tech Union possible, and from time to time have contributed generously for other special purposes. Members of the Faculty have also been generous in furnishing the financial means for certain improvements in the various departments. This is the most certain sign of our strength as an educational power—the support and interest shown in the welfare of the Institute by those at any time connected therewith.—*The Tech.*

AMONG THE UNDERGRADUATES

The New Finance Committee has already worked Wonders—The "Tech" needs better Alumni Support—Tech Show Announced

The most important development in undergraduate affairs is the establishment of a finance committee, whose duty is to have general oversight of the finances of practically all the student activities in coöperation with the Institute committee. There are three alumni members and twenty-five, or more, undergraduate members, representatives of the various student interests. Two meetings of this finance committee have been held. At the first meeting each man present reported informally but fully on the present status and future prospects of the society he represented and after the last man had spoken and the last suggestion had been made by alumnus or undergraduate the members present realized what coöperation of this kind will surely mean to student activities at the Institute. Most of the reports were very satisfactory. It developed, however, that *The Tech* was not receiving the support it should have, either from the undergraduates or from the alumni. The men present agreed to form themselves into an active working committee to change this condition, and at the second meeting of the finance committee two weeks afterward a most encouraging condition of affairs developed. The status of every interest had been much improved and *The Tech* had greatly benefited by the team work that had been developed. The paper is now in a much healthier condition, and as a news organ it is probably not to be excelled in the college world. It ought to have at least a hundred more alumni subscribers.

The hocky team has started out with good prospects and in the match with the Harvard team, which is especially strong this year, the latter had to put its first rank men into the game and defeated Tech with difficulty by a score of 4 to 3.

The Institute has a strong basket ball quintet in the field with thirteen games scheduled. In the game on December 21 it beat

Boston College by a score of 46 to 35; on the 23d it vanquished the Brooklyn Polytechnic by 6 to 3, but met defeat at the hands of the College of the City of New York by a score of 4 to 3. The future games are with Dartmouth, Brown, Rensselaer Polytechnic, Union, Williams, Tufts and Wesleyan.

A swimming team has been organized and arrangements have been made to use the pool at the Brookline Gymnasium. Boxing has taken a new start under Eddie Shevlin, who has been appointed boxing instructor and who will conduct a class in calisthenics three times a week. A wrestling team has been organized which will be in the care of Coach Mathers, the New England heavyweight wrestling champion.

"Frenzied French" by Edwin C. Vose, '11, and Wellesley J. Seligman, '12, has been selected as this year's Tech Show. The play is an up-to-date two-act musical comedy, the scene of which is laid in the vicinity of Boston.

Technology and the Commonwealth

In forty-nine years the Institute has received from the Commonwealth only $552,191.78 which can properly be charged to it,—an average of a little over $11,000 a year. The Institute has expended to date about $13,000,000 of which the Commonwealth has paid only a very small percentage. The expenses for the year ending September 30, 1909, were $575,794.35, of which the Commonwealth paid $25,000, besides the $4,000 for scholarships. The sum received during that year from student fees—$325,434.25—was not sufficient to pay the salaries of the staff, which amounted to $428,420.27 (teachers, $347,704.79). The expenses exceeded the receipts by $29,819.51.

The state, in other words, bears less than 5 per cent. of the cost of the Institute's work, the students paying a little more than 50 per cent., past and present benefactors nearly making up the large remainders. This constant heavy drain on gifts and bequests which would otherwise be available for endowment retards the development of the Institute.

TECH MEN IN THE PUBLIC EYE

MR. H. J. HORN, '88, assistant general manager of the Chicago, Burlington & Quincy Railroad's lines west of the Missouri River, has been appointed assistant to Mr. Charles S. Mellen, president of the New York, New Haven & Hartford Railroad. Mr. Horn will have charge of the operation of the steam lines of the New York, New Haven & Hartford Railroad and will do practically the same work that was done by Mr. John F. Stevens, formerly vice-president of the company. After Mr. Horn was graduated from the Institute in 1888, he entered the service of the Northern Pacific Railway as draughtsman, and winning his way step by step, through engineering, operating and administrative departments, he became general manager of the system in 1904.

JAMES P. MUNROE, '82, executive director of "Boston 1915" was elected president of the National Society for the Promotion of Industrial Education at the close of the fourth annual convention in Boston. He succeeds Charles R. Richards, '85, who was president last year. Mr. Munroe has just been elected second vice-president of the City Club.

C.-E. A. WINSLOW, '98, assistant professor of biology at the College of the City of New York, has been made a member of the advisory board of statisticians, which in connection with Dr. Ernst Lederle, commissioner of health of New York City, will endeavor to outline a plan for a better computation of health and mortality statistics.

FRANCIS H. MCCRUDDEN, '00, recently connected with the Institut der Universitats, Würzburg, Germany, has been appointed chemist on the staff of the Rockefeller Institute for Research.

GEORGE E. HALE, '90, director of the Mount Wilson Solar Observatory, Pasadena, Cal., received the degree of Ph.D. at the centenary celebration of the University of Berlin. His was one of three honorary degrees conferred upon American men of science.

GARDNER W. PEARSON, 1885–86, has been appointed adjutant-general and chief of staff by Governor-elect Foss. Captain Pearson is a nephew and ward of Gen. Benjamin F. Butler. He is a member of the firm of Lowell, Lawrence and Washington, patent attorneys, with offices at Lowell, Mass.

HAROLD S. BOARDMAN, 1895-96, has been appointed dean of the college of technology of the University of Maine. He was graduated from the University of Maine in 1895 and after doing graduate work at the Institute, he took an engineering position with the American Bridge Company, afterwards returning to the University of Maine as instructor in civil engineering. He was made professor of civil engineering in 1904.

EDWIN H. BLASHFIELD, 1865–66, is a member of the newly-formed American Academy of Arts and Letters, known as the "American Immortals." After leaving the Institute, Mr. Blashfield studied in Paris under Leon Bonnat, also receiving advice from Gerome and Chapu; he exhibited at the Paris Salon, yearly, 1874–79, 1881, 1891, 1892; also several years at the Royal Academy, London; he returned to the United States in 1881; he has exhibited genre pictures, portraits and decorations. Among his paintings are "Christmas Bells" and "Angel with the Flaming Sword." He decorated one of the domes of the Manufacturers' Building, at the World's Columbian Exposition; Collis P. Huntington's drawing-room; great central dome of the Library of Congress; a decorative panel for the Bank of Pittsburg; the Lawyer's Club of New York; Astoria ball-room ceiling; library of the town house of G. W. C. Drexel, Philadelphia; the supper-room of the New York house of W. K. Vanderbilt; a decoration for the high Appellate Court of New York; ceiling and three lunettes in the Prudential Life Insurance Company's building, Newark, N. J.; he decorated a room in the house of Adolf Lewisohn, New York; court-room in Court House, Baltimore; two lunettes in senate chamber, state capitol of Minnesota; large panel in the state capitol of Iowa; decoration of the entire chancel of the Church of the Saviour, Philadelphia; decoration of four main pendentives of the dome of the new Court House, Newark, N. J., etc. He is a member of the National Academy of Design, also a member of the Mural Painters, Architectural League, etc.

He has been president of the Society of American Artists, and has lectured on art at Columbia, Harvard and Yale.

JOHN S. BLEECKER, '98, manager of the Columbus Railway Company, of Columbus, Ga., was recently elected president of the Georgia National Electric Light Association Section. Mr. Bleecker is the son of Rear-Admiral J. V. B. Bleecker, U.S.N., retired. On leaving the Institute he entered the employment of the American Bell Telephone Company where he remained until 1900 when he entered the services of the Stone & Webster Engineering Corporation, where he has since remained. He has covered a wide range of duties, from a lineman to manager in various parts of the country.

ALBERT SAUVEUR, '89, professor of metallurgy and metallography, at Harvard University, has been, perhaps, the most prominent figure in the development of metallography in the United States. He became interested in the newly-discovered science of metallography by Doctor Sorby of England, and in 1891 made a practical application of it in the laboratory of the Illinois Steel Company, in Chicago. In 1898 he founded *The Metallographist*, a quarterly review devoted to the science, which was made a monthly in 1904, and changed in title to *The Iron and Steel Magazine*. Professor Sauveur became connected with Harvard University in 1898 and was made professor of metallurgy and metallography in 1906. He was also a lecturer at the Institute from 1898–03. Largely through the results of his investigations, the microscope is in daily use in more than three hundred laboratories for the examination of metals.

GREENLEAF W. PICKARD, 1897–98, is the subject of an article in the series on American electrical engineers in the *Electrical World*. Having taken up the study of wireless telegraphy immediately after leaving the Institute, he made investigations at the Blue Hill Observatory in problems connected with wireless telephony for the Smithsonian Institution. In 1902 he joined the engineering staff of the American Telephone & Telegraph Company in charge of the investigation of wireless telephony. In 1906 he became consulting and electrical engineer with the Huff Electrostatic Separator Company of Boston, and the Wireless Specialty Apparatus Company of New York City, and has also

opened an office as consulting engineer. He is the inventor of many important devices in wireless telephony and telegraphy and has written largely for the technical press.

WILLIAM H. GERRISH, '88, has been appointed smoke inspector of the Massachusetts Gas and Electric Light Commission, following a competitive examination under the civil service requirements. Mr. Gerrish has had a wide experience as mechanical engineer and manufacturer chiefly along textile lines.

LOUIS K. ROURKE '95, superintendent of streets of Boston, has succeeded in effecting one of the most sweeping changes in the administration of municipal affairs in that city by securing the passage of an ordinance consolidating the engineering, water and street departments, all of which deal with engineering construction work into a Department of Public Works, of which he will have charge as commissioner. In the half year that he has been at the head of the Street Department Mr. Rourke has won the confidence of the people of Boston who find in him a strong, capable, business executive.

In eliminating politics and reorganizing the engineering construction work of the city on a broad business basis, Mr. Rourke is merely applying the scientific methods of administration learned in his experience which has been an interesting one. Immediately after graduating from the Institute in 1895 he began his active engineering career as a section hand on the Boston & Maine Railroad where he remained for two years in different positions rising to that of assistant roadmaster. Then came an opportunity to go to Panama where for two years he was supervisor of track of the Panama Railroad; this being during the French régime, when sanitation on the Isthmus was an unknown luxury. Life in the tropics apparently had no terrors for Mr. Rourke for the next five years were spent in railroad contracting work and management in Equador, Mexico and Chile, until 1904, when he returned to Massachusetts, formed a partnership with his brother, and as contractor built some portions of the state highways. Late in 1905 he was asked to go again to Panama, and he entered the service of the Isthmian Canal Commission, holding various positions as supervisor of construction, then superintendent of tracks and dumps, assistant division engineer and acting division engineer of the Culebra Division.

While holding the latter position three years ago, he effected a complete reorganization of the work of the Culebra Division which proved so successful that later his plan of organization was adopted for the entire canal, and he himself was directed to organize the Central Division, thirty-two miles in length out of the fifty miles of the canal, and comprising nearly all of the dry land excavation, including the famous Culebra Cut, nine miles long. Under the direction of one of the Canal Commission, Mr. Rourke was placed in charge of the Central Division having direction of a staff of 12,000 men and an annual pay-roll of $6,000,000. This position he held for two years, until he resigned to come to Boston. That Mr. Rourke is a man who has done large things is evident from the testimony of those high in authority, including the President himself.

Arthur L. Williston, '89, formerly of the Pratt Institute of Brooklyn, is the head of the Wentworth Institute now being erected opposite the new Museum of Fine Arts in Boston, which will probably open its doors to students next fall. After being graduated from the Institute Mr. Williston became connected with the faculty of the Ohio State University. He has had engineering experience with one of the Western railroads and was a member of the commission which established the Carnegie Technical Schools in Pittsburg. At the Pratt Institute he was director of the department of science and technology for twelve years.

SOME TESTS OF ACADEMIC EFFICIENCY

Quality of Product a Controlling Factor—Character and Ability of Teachers all-important—A grave Oversight to ignore the Spirit and Method of Teaching

The recent publication by the Carnegie Foundation for the Advancement of Teaching, of the report of Mr. M. L. Cooke on the efficiency of the conduct of the physics departments of several institutions of learning gives us opportunity to print a part of President Maclaurin's address delivered at the dedication of the engineering laboratories of the University of Kansas last February, when the advance sheets of this report appeared.

. . . Now it seems to me that in the process of striving to raise our standards we are a little apt to slavishly copy what other people are doing without clearly recognizing why we are copying them and what we are striving to attain. One college opens a new department in some sphere of activity; another thinks it is bound to do the same thing, although the local conditions may be totally different. If one school of engineering establishes a new course another is sure to follow with a similar course. We need a measuring rod to determine whether our level is above or below our competitors. How are we to reach a real standard of efficiency? How are we to know whether our institution is better or worse than some other institution? Of course various standards have been suggested. The great objection to most of them is that they are too mechanical. The best part of any educational institution is a spiritual thing and a spiritual thing must be spiritually discerned.

Now one of the institutions in this country which is doing its best to carry out a leveling process and trying to raise the institutions of the country is the Carnegie Foundation for the Advancement of Teaching. Its course is so brief that none here can have missed the opportunity of following it. Founded only a few years ago by Mr. Carnegie for the avowed purpose of pensioning professors who had long served their country as teachers and investigators, it is being put by those who have managed it to a quite different purpose and that purpose is to standardize our institutions.

I am not going to discuss what the foundation has done or is doing, but I should like to refer to a report, the advance sheets of which the Carnegie Foundation has just issued, under the title "A Comparison of Academic and Business Efficiency." The fundamental idea that suggested the drawing up of the report is one that must attract us all. It was to obtain a report on the efficiency of different educational institutions looked at from the viewpoint of a business man. To this end the foundation employed the services of an accomplished engineer, Mr. Cooke, and asked

him to report on a number of educational institutions in this country. He was instructed to employ the same methods in his investigation that he would if he were reporting on the efficiency of a cotton mill or an automobile factory. To simplify the problem he was to confine his attention to eight institutions; to further simplify it he was to deal with a single department in each of these institutions; that department happened to be the department of physics. The report is a lengthy one—those of you who are interested will doubtless read it for yourselves—but I may just sketch with extreme brevity the fundamental guiding principle.

Mr. Cooke begins with the truism that if you are to test the efficiency of a factory from a business point of view you want to know the cost of the working of the machinery. He therefore proceeds to discuss how much it costs to train men in physics in these different institutions and sets up a standard of measurement of what he calls the "student hour," the cost of teaching a student the subject of physics for a single hour. After an elaborate system of figures and a great deal of computation he discovers what is supposed to be the cost of teaching a student in physics for one hour in Harvard and Boston Tech, and these different institutions. Now whether his figures really represent the cost or not is questionable, but there can be no doubt that they do not gauge the efficiency of the institutions under consideration.

The efficiency of an automobile is not gauged by its cost, and certainly the efficiency of Harvard or Boston Tech is not gauged by their cost. You must of course look to the product. Now a man of Mr. Cooke's acumen could not overlook so obvious a fact, although he passes it over with almost unpardonable brevity in a report that professes to deal with the question of *efficiency*. He does not always seem quite true to himself. He tells us in one place that "the cost per student-hour has absolutely no value in distinguishing relative educational values." Elsewhere he says "certainly some idea of quality will be gained by simply knowing the cost." However, he does recognize that the *quality* of the product must be tested before we have any real gauge of efficiency, but when it comes to suggestions for a test of quality he formulates a plan that a serious educator could regard only with laughter or with tears. Here it is—let us establish a central bureau to which may be submitted the examination papers and the answers from the five highest and five lowest students, and let the central authority assign marks for the difficulty of the questions and the rigor with which they were answered. I shall not presume upon your patience by pointing out to what abuses such a plan would be exposed, nor how paltry a contribution it is towards the solution of an extremely important national problem. I should like, however, to call your attention to various matters to be kept in view when we set out on the task of testing the efficiency of any educational institution.

I would remark at the outset that the matter is extremely complex and that no wise man would even dream of giving a *numerical* measure of the efficiency of Harvard or the University of Kansas. He would no more do that than he would say that the efficiency of his friend Jones is 62, and of Smith is 55. On the face of it, such apparent accuracy is ridiculous. But we do want to know in a general way how we are to gauge efficiency, and I need only sketch the process which is a fairly obvious one. The natural way of attacking the problem would be to attack it directly. We are interested not in the machinery but in the product. The obvious procedure would be to examine the product in the different institutions and see how

they stand relatively to one another. We would have, of course, to set out with some fundamental conception of what all of these educational institutions are striving for. Unless we agreed about that we could not possibly agree as to their efficiency. Fortunately, there is general agreement today that the aim of all educational institutions is a social one. The University of Kansas, and Boston Tech and Columbia University and all the rest are striving to this great end—to train men to serve the state intelligently, honestly and effectively. We are all attempting that. To what extent do we succeed relatively to one another?

Now, the natural process, I say, would be to examine the product of these different institutions and see whether men coming from these different institutions have "made good." This, however, is no easy matter where there are thousands of men to be considered and the gauging of the social efficiency of a single man is so difficult and delicate an operation. And then, you have to remember that the "making good" by an individual may have really little to do with the educational institution in which he has been trained. I had the honor of being brought up in the English University of Cambridge, which has been spoken of by a poet as a "nest of singing birds," for the reason that that university has produced, if I may use the term, an extraordinarily large number of great poets. But no one seriously suggests that the poetic power of Tennyson or Wordsworth had much to do with his training in the University of Cambridge. And so it is with the actual making good of a great many of our leading men; in most cases it is only indirectly due to the training they received in the university. Then you must bear in mind that an extremely important factor in the making of good flour is to have good grain, and that one institution might be as efficient as another, but yet for the lack of good grain not turn out so fine a product. Thus you would have to gauge not only the graduate, but the men at entrance, and this would greatly complicate the problem. Practically, then, I think, you would have to proceed indirectly by carefully examining the means that were employed in the institution to produce the results. If you bore in mind the idea of social service as a thing toward which we are all striving, you would have to begin, I suppose, with some estimate of the relative social value of a college education and the education in a professional school, taking each at its best. The aim of a college is to train a man broadly and so develop every side of his character that he can devote himself to the duties of citizenship in whatever special sphere of activity he can be most effective. The professional school does not neglect breadth of outlook or the duties of citizenship, but it bends its powers to the education of men for the service of society through the medium of definite professions. To gauge the relative value of these two schools you would need to decide whether it was more important to have an alert, broad-minded man with no professional skill, or a man who could set your leg if you broke it, or bridge the Mississippi if you wanted to cross it. It would be an extremely difficult question to decide, but you would have to do it somehow if you wanted to solve this problem numerically. Then if you confined your attention to professional schools you would need to estimate the relative value to the community of a doctor, lawyer, clergyman or engineer, and so on. In doing this you would necessarily take into account local needs and local peculiarities. You would have to consider, as a single sample of what I mean, whether there was a real demand in the community for an increased number of doctors, and so with the other professions.

Here today we are celebrating the foundation of buildings which are to be devoted to science and its applications, and so it would seem natural to consider that kind of educational effort somewhat more minutely. You would have to begin with deciding on the usefulness to the community of an education such as is being given in this institution, and in particular in this school of engineering where men are trained in the sciences for the service of the state. Now, it is such a commonplace today that science has revolutionized the world that I shall not weary you with attempting to demonstrate that fact. At the same time I should like to say in passing that, like many another commonplace, it is too often neglected in actual practice. It seems that individuals and states in making provisions for education constantly fail to recognize how enormously important to the welfare of the state it is that men should be trained in science, and in its application to every branch of practical life. We live in an age preëminently scientific, and if we are not able to cope with a problem scientifically we can not cope with it at all. But not only is a scientific training essential anywhere to any country today, it is, I think, peculiarly important in this country at this particular time. It seems to me that one of the great dangers of our democracy is the prevalence of the idea that one man is as good as another. It is an idea founded on an erroneous theory of democracy and one that appears utterly false from a scientific point of view. It too often gives support to the doctrine that any man will do for any position that he is clever enough to get. Nothing has surprised me more in moving about this country than to see countless instances of men who have had no adequate scientific training employed in the service of cities and of states, to do work that really needs a very considerable scientific equipment. They are amateurs doing the work of professionals. We have suffered too much at the hands of these amateurs, and we must remove them—root and branch. We must educate our communities in such a way that it will shock their moral sense to see a man, let us say, administering a department of public health who knows little or nothing of biology and bacteriology or any of the other fundamental sciences that enter into the very heart of his work. Then we have to bear in mind that this nation is peculiarly given to extravagance. This is due largely to the optimism of the American people, a quality on which so much of America's success depends. But it has its drawbacks, like other good things, and the spirit of extravagance may yet drive us upon the rocks. We must not forget that conditions are rapidly changing and that what might suffice for a past generation will not do today. A generation ago we could speak of our natural resources as practically unlimited, now we begin to see their end—at least in some directions. And apart from this we must recognize that under any circumstances *waste* is a sin and that the record of progress is largely the record of the elimination of waste. We shall have to make up for the diminution of our natural resources by new applications of science which will make ten blades of grass grow where one grew before, and by new inventions which will save 50 per cent. or more of the waste in most of our industrial processes. However, even without any new inventions we could easily make enormous savings by the proper use of the existing knowledge. Let me give you a single example. A few years ago a graduate of the Massachusetts Institute of Technology, trained in the department of biology, was appointed to an administrative post in one of the great cities. He invented nothing new, but merely joined common sense and executive ability to the scientific knowledge that his training at Tech had given him. Before long he had given the city a much

better service than it had ever had before, and at the same time had *saved it more than a million dollars each year*. Suppose you multiply the million dollars thus saved by even a very small fraction of the thousands of men trained each year in the scientific institutions of this country and you may form some estimate of the saving grace of such institutions and of their value to the community.

I think, then, that there can be no question that you would have to put in a very large factor of usefulness, if you were estimating the value of such an educational institution as we are considering today—at least if you realize in any adequate degree the importance of scientific knowledge in public and private life. And, of course, a not unimportant element in such scientific knowledge would be a knowledge of physics, and under ideal circumstances this knowledge might be at least partially tested by Mr. Cooke's method, to which reference has already been made. It would, however, at best be only a partial test of knowledge, and it would neglect a great many factors of the first importance. May I remind you that *knowledge* is very far from being everything and that much of our educational work today and in the future must be to deliberately *smash up the idol of knowledge*. We are peculiarly prone to this form of idolatry in a scientific school, for science rightly lays a great stress on facts and their accurate apprehension. We are very apt to overestimate the value of such knowledge, and it is because we have done this so much in the past that there has been so much disappointment in many quarters over the results of scientific teaching. It is a fact that water is composed of oxygen and hydrogen, and it is the knowledge of such facts that is tested by such examinations as Mr. Cooke proposes. But, except to a very few, such knowledge profits little or nothing—what is infinitely more valuable is an understanding of the method by which the facts are reached and an appreciation of the spirit that compels their investigation. Here, as elsewhere, it is the spirit that giveth life, and any test of efficiency that ignores the spirit and deals only with the bare fact is a mockery.

It would be a monstrous oversight to ignore the method and the spirit of the teaching. Are the pupils trained by a mere grind over knowledge, a mere hammering in of facts—enough perhaps to ensure that they reach the requisite 50 or 60 per cent. in Mr. Cooke's examination? We must all know schools that would appear to be highly efficient from such a test, and which are really extremely inefficient; and on the other hand some of our best institutions might not make a very good show when subjected to Mr. Cooke's scrutiny. At the Boston Tech a method has been in vogue for long that there is deemed highly satisfactory—it is known as the "do-it-yourself method." The students are put as much as possible upon their own resources and learning is not made easy where it seems better for a man to experience the apparent hardship of overcoming a difficulty for himself.

Then, when considering method, we should want to know whether the students are taught to master fundamental principles, or to spend most of their time over details or particular examples. Is it made manifest to them that the details of practice are constantly changing, that what is good in that respect today may be antiquated tomorrow, whereas fundamental principles, like the brook, go on forever?

As to the spirit of the teaching—is it possible to overlook the character of the teachers? Are they men who understand the depth and breadth of their calling? Do they take a large view of the life of today, and have some prevision of tomorrow? Are their circumstances such as to make this larger outlook possible or probable?

Are they narrow specialists or broad-minded, far-seeing men? Are they paid so that a reasonably full life is a possibility, or are they so ground down by poverty that they must give most of their thought to the vexed question of the cost of living?

Finally, is a successful effort made by the teachers to convey their largeness of view and breadth of outlook to their pupils? Do the students learn to understand that science does not affect mankind merely on the material side? Do they see that all the changes that science has brought about necessarily involve a profound mental and spiritual change—a change, so great, indeed, that it is well-nigh impossible for us thoroughly to sympathize with our grandfathers? Do they realize that science has thrust us into a new world and that our new surroundings have made us new men? Unless they appreciate this they can not be in real communion with the life of this age. They must live more or less apart, and move away from the great current that is sweeping the world along. Like Bernard Shaw, they must find that they were born in the seventeenth century and that they have not yet outlived it.

I might express this last test of efficiency otherwise by saying that you must look to the *cultural* element in the teaching of science—but I am afraid of the word "culture." It has been so terribly abused. Some speak as if the test of culture were the knowledge of Latin, or of Greek, or of French literature, or of Italian painting, or of what not. As a matter of fact it is none of these things, for I take it that the root of culture in any worthy sense of that word is *the possession of an ideal that is broad enough to form the basis of a sane criticism of life.* I hope that I need not turn aside to demonstrate the competency of science to present such an ideal. I willingly admit that some such ideal may be reached by various paths, through the study of literature, or of art, or of science. I should be the last to suggest that these are rival or mutually exclusive pursuits or that any one can justly claim a monopoly of culture. To know the best that has been said in literature and to use this as a touchstone in the criticism of the life of today, or to reach through art the ideal of perfection in form and color and make this broad enough to embrace life as a whole—each opens a promising avenue to culture. But how can a criticism of life be broadly enough based today unless the main results of scientific investigation lie at its roots and the method and the spirit of science be in the atmosphere that surrounds it? It can not, I think, be broad enough, unless we greatly exaggerate the part that science has played and is playing in the modern world. And I do not think that we exaggerate it, for practically all must recognize that there are few important problems of life today that science does not touch and touch most closely. This being the case, can a school be declared efficient that fails to give its students a vision and a grasp of the scientific ideal—an ideal that will guide them in the solution of all the complex problems that face individuals and face the state?

is needed has already been recognized by one of the leading scientific institutions in America. The Alumni Association of the Massachusetts Institute of Technology is at present raising funds to establish a course in aviation, and to purchase apparatus for producing air-currents powerful enough to be used in experiment. Certainly the effort is in the right direction. If the air-ship is destined in the future to make war, both on land and sea, as futile as it is now ridiculous (of which Mr. Moisant, the distinguished American aviator, seems assured), its development merits every aid that science, as well as wealth, can give. Moreover, from the student's point of view, we venture to say that the science of aviation, even though it may not afford to humanity the great benefits it promises, is a subject which, in its appeal to the imagination and as a stimulus to original investigation, will prove a worthy rival of any of the humanities.—*Old Penn.*

The provision of facilities for the practical training of technical graduates in public utility organizations is constantly growing in favor among progressive administrators. It is well that this is so, for the problems of management are today so complex, the intricacies of traction, lighting and power systems are so great technically, and the cost of mistakes in executive judgment so far-reaching, that means must be devised to give the graduate as wide an acquaintance as possible with the routine tasks which maintain the service and a first-hand appreciation of the dependence of the entire organization upon the economical use of labor and materials. However broad may be the training of the technical institution from which the future engineer or executive steps forth into the world of business, it is next to impossible to acquire during the undergraduate years that familiarity with the rough, raw materials of production and the influence of personality upon labor costs and accomplishments that differentiates commercial life from the secluded comfort of the laboratory. In many of the great arts upon which civilization leans today it is no longer possible for a man to "grow up with the industry." The development of electric traction, for example, has progressed so far that only the exceptional personality can hope to begin at the bottom and attain the higher executive positions. Other things being equal, the man of broad education along technical lines is needed to administer the great properties. He must start technically where older men trained in the school of experience stop, and the lack of practical training in the field must be supplied on the intensive principle.

In a typical course of training of this character the technical graduate secures a position with the company through the regular channels of employment, and after passing the regular examinations as to physical and mental fitness without disclosure of his ultimate purpose, he is set at work on the cars, becoming a regular conductor and then a motorman on a distant division. One or two of the higher officers of the company, acquainted with the aims of the course, follow the graduate industrial student's progress through some three years of temporary service in the various departments, including car house and shop work, line and track maintenance, emergency service, overhead and underground construction, power house operation, including testing, wiring, inspection, oiling, switchboard service and stoking. The course provides for service in the clerical and stock departments and brings the employee taking it into personal contact with the difficulties and time required to string feeders, solder cables, handle heavy bus-bar and switchboard connections, work with tools on relatively inaccessible equipment parts

from awkward positions, and to clean out boiler tubes, replace burned parts, maintain pumps and motors. Other practical tasks included are the preparation of pay rolls, testing of coal, water and draft, rewiring cars, connecting controller equipment with motors and rheostats, work in the purchasing bureau, preparation of timetables, handling of correspondence, installation of compressed air equipment, maintenance of trolley wire and snow-plow service.

At the conclusion of the course the student employee may not be an expert manipulator or workman in any of the branches covered, but dexterity is not the object of the training. If the best use has been made of the time, and there is little chance of anyone's spending three years in such post-graduate school of hard knocks without turning every week to excellent account, the man completing the rounds of departments should possess as good a preparation for future executive work of larger or smaller range as can be imparted by seven years of theoretical and practical training. By some such means will have to be recruited many of the industrial officers of the future.—*Engineering Record.*

Technical college instruction was discussed briefly in the presidential address of Mr. Alexander Siemens before the Institution of Civil Engineers on November 1. He pointed out that two definitions by Aristotle were too often forgotten. The first of these is: "Science is the trained faculty of demonstrating necessary conclusions from necessary premises, and these conclusions are independent of the producer." The second definition is: "Art is the trained faculty of producing, involving sound reasoning; it has to do with the genesis, the production, of things, and the result depends on the producer." From these definitions it directly follows that every profession must have its "science" on which its "art" is based, and for success in either training is necessary. Mr. Siemens holds the opinion that these very old and very true definitions show clearly that the engineering college training should deal principally, though not exclusively, with "science," viz., the natural laws which are "independent of the producer," leaving the "art" of engineering to be developed by practical work either in the field, in the drawing office or in the workshop. This thought is respectfully submitted to the particular attention of the Western college which announced a couple of years ago that one of its special facilities for teaching electrical engineering was a new and complete system of call bells installed in its main building.—*Engineering Record.*

Current Harvard statistics, showing that public schools are a more effective nursery of scholarship than private schools, do not, of course, apply to Boston alone, and they are interestingly supplemented by the report of the president of the Massachusetts Institute of Technology, which indicates that graduates of the Mechanic Arts High School, the natural "feeder" for Tech do not take high rank at that institution. It would be hardly fair to indulge in generalizations on the basis of either statement. Hitherto high schools that draw from the whole city have stood well in public estimation — much better, indeed, than some of the district high schools, where the idiosyncrasies of a principal or the pettiness of a controlling group of teachers has caused instruction to degenerate into dull and uninspiring routine. The mildest demand that citizens should make, in view of President Maclaurin's statement, is that the weak points in all be sought out and strengthened unsparingly. So few children, comparatively, go beyond the

elementary schools, and so much money, proportionately — or disproportionately — is expended upon the high schools that if these latter institutions cannot clearly demonstrate their efficiency for classical or technical or business preparation it is time that they should be put in position to do so.—*Boston Transcript.*

In its recent investigations on the teaching of physics, the Carnegie Foundation measured some American colleges by counting-house standards and found them wanting. That is not altogether surprising; the same would doubtless be found true of the churches, hospitals, and divers other eleemosynary institutions of the land were a like test applied. If it should turn out to be otherwise one might reasonably infer that churches and hospitals were devoting more attention to their profit and loss accounts than to the cure of souls and bodies. But we live in the heyday of the statistician, and these institutions, like all others, must gracefully permit him to take their measure. Yesterday we had university instruction reckoned in terms per "student-hour," tomorrow we may have religion tabulated in terms of cost per brand snatched from the burning.

Now all this is helpful enough in its way, and some of the results disclosed may perhaps point the road to improvements in the methods of college accounting, or in the forms of treasurers' reports. But it is very easy to press these counting-house analogies to the point of absurdity. A minimum cost per ton-mile, for example, may be the best evidence of railroad efficiency; but the university which aims only to provide instruction at a minimum cost per student-hour will certainly, in the course of time, find very few students to instruct. It might almost be said that the quality of college instruction varies in inverse ratio to its cheapness. Measured in terms of cost per student-hour, it is probable that Oxford and Cambridge would make a sorry showing; for they have many professors who draw a whole year's stipend for six lectures delivered to a dozen students. But even at that, when the instruction was given by Huxley, or Kelvin, or Acton, it was doubtless worth the price. And for that matter our own Mark Hopkins, at the end of his log, will probably continue to rank as a laborer worthy of his hire, even though his teaching, when duly analyzed by certified accountants, should prove to have been imparted at a rate above the normal margin of cost.

Statistical computations of the sort undertaken by the Carnegie Foundation do not, therefore, form a very safe basis for conclusions. That is not to say, however, that they are without their value. If nothing else, they will serve to make the college authorities more watchful, more energetic in the curtailment of waste, and more attentive to the multitude of details which affect instructional efficiency.—*Boston Herald.*

Will you please give me some information on manual training in our schools? When was it first introduced?—E. C. O., Foust Hill, Mich.

Manual training is the training of the hand in the use of tools and in practical drafting, as a part of a system of general education. In 1877, a manual training school in connection with the Massachusetts Institute of Technology was founded, and, 1879, the St. Louis (Mo.) Manual Training school was established. In 1884 schools were established in Chicago, Baltimore and Toledo, and in the following year one was established in Philadelphia. At the present time manual training is a part of the curriculum in every agricultural and mechanical college in the United States.—*Toledo Blade.*

Columbus, Ohio, boasts that it receives more pay for the by-products of its garbage treatment than any other city with a reduction plant. It has for superintendent of garbage collection a graduate of the Boston Institute of Technology, who works for $100 a month for the experience, having had much better offers elsewhere. He has studied the problems which this new civic enterprise presents and has made himself popular by seeing that collections are regularly made.

In Buffalo collections are made regularly enough, but wagon men seem to think sometimes that a trail of refuse along the walk from rear to front is necessary as a sign that they have called. If the Columbus man has remedied this one defect in the service, he is earning his pay.

The use of reduction plants, with the attendant manufacture of by-products, is spreading slowly. Economic treatment of garbage is a subject of which cities appear reluctant to take hold. There are examples, however, of plants which pay, and plants which might not return a profit would, at least, reduce the cost of the service.—*Buffalo Express.*

It is nothing new to hear that the worthy institution popularly known as "Tech" is experiencing a financial crisis. That crisis, as a matter of fact, has existed for years; and it is unfortunate for the institution, and not at all creditable to the community or to the country that this should be so.

"Tech" men and "Tech" methods are honored the world over. Some years ago, when England was considering the problem of technical schools, a distinguished man of affairs was sent to this country to see what could be learned, and he reported finding the Massachusetts Institute of Technology the best school that had come under his observation. Graduates of the institution have been called upon to help solve some of the greatest engineering problems of the times. They assisted President Taft in his final consideration of the Panama Canal problem. They are doing invaluable work right here in Massachusetts—work that redounds to the credit of the Commonwealth as a whole.

The institution has been in the forefront in its special sphere ever since it was founded, but to keep it there has been an exhausting and discouraging task. This is exactly the situation that exists today and we trust that the plans to relieve "Tech" of its embarrassments will be successful. Success was never more richly deserved than in this particular case.—*Boston Journal*, December 25.

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NEWS FROM THE CLASSES

1868.

PROF. ROBERT H. RICHARDS, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

Prof. Robert H. Richards spent Christmas in his native town, Gardiner, Me., where he visited his brother Henry Richards, who was an architectural student at the Institute in the early days. He also visited his brother General Richards who is commander of the National Soldiers' Home at Togus, Me., and his cousin Robert Hallowell Gardner, who is the present owner of the Gardner mansion where he was born.

The secretary is in receipt of a long and interesting letter from Andrew H. Russell, who has been roaming about Europe for three years and who was in Switzerland when he wrote. Just before retiring from active duty in the army in 1908 he started out for a change of scene and to avoid the tedium of finding himself with nothing to do in a place where he had been formerly actively employed. One of the entertaining parts of his letter is a description of a visit to Biskra, so familiar to those who have read Hitchens' "Garden of Allah." Russell has been very desirous of spending a winter where it is "always mild and dry" and had been looking forward to this trip with fond anticipations. These anticipations were not fulfilled as the season was an unusually cold one. There was snow in the mountains and rain in Biskra, but although disappointed in this respect he found much to interest him there, both on the edge of the desert as well as to and fro among the passes of the Atlas Mountains. The details of this trip, as he pictures them, make charming reading. The chronicle of his experiences in the Mediterranean countries raises a strong wish that one might have been with him. His description of Milan as contrasted with other cities of Italy, and, in fact, of southern Europe, as well as of the Milan he knew thirty years ago, is hardly to be excelled. Russell refers to the high honor that has been given to his classmate Brig.-Gen. W. H. Bixby, who is now chief of the corps of engineers of the army. He expresses his great interest in Technology and regrets that he could not have been with his classmates at the reunion of 1909.

1877.

RICHARD A. HALE, *Sec.*, Lawrence, Mass.

William D. Hartupee, second vice-president of the Pittsburg Plate Glass Company, and one of the most widely known plate glass men in America, died at his home, Hotel Schenley, Pittsburg, Pa., at 11.45 o'clock Thursday night, September 23. Death was caused by a stroke of paralysis, the second stroke in three months. Mr. Hartupee had partially recovered from the stroke he sustained in June, and had resumed work at his office.

Mr. Hartupee was born in Pittsburg, where he lived all his life. He received his education at the Western University of Pennsylvania, later going to the Boston School of Technology, and still later he studied mechanical engineering at the University of Carlsruhe, Germany. Returning from Germany, he became associated with his father, Andrew Hartupee, in a machine shop and foundry, the works being situated at Ferry Street and Third Avenue. During the Civil War many cannon for the Federal army were cast in Hartupee's works.

In 1890 William D. Hartupee became interested in the manufacture of glass and was instrumental in forming the Charleroi Plate Glass Company. He filled the offices of manager and engineer of that company until its absorption by the Pittsburg Plate Glass Company. His rise to eminence in the greater company was rapid and at the time of his death he was chief engineer, chairman of the manufacturing department and second vice-president of the company. His wife survives him; there were no children.

Mr. Hartupee was a man of generous nature, kind to his friends and employees and was highly esteemed. To his fellow-officers he was a loyal and pleasant associate. He was eminent in his profession. The modern plate glass works of the company at Ford City, Pa., and Crystal City, Mo., will long remain as monuments to his ability and genius. The plate glass industry in America has sustained a great loss through his removal.—The secretary has only recently learned that Allen Knowles, a former '77 man, died at Yarmouthport, Mass., on February 2, 1907. He was a civil engineer and was engaged in railroad work in the West for many years.—We also have to record the death of Frederick H. Prentiss, who was associated with the class of '77, but was graduated with '78. He died at Denver, Col., March 29, 1910. In his early days he was connected with John C. Hoadley, the prominent mechanical engineer, and also with the New York Heating Company, but nothing has been learned of his later life.—George L. Flint, of Reading, Mass., is connected with the Simonds & Poor Carbonator Co., of Boston.

1885.

I. W. LITCHFIELD, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

Dave Baker has been very ill with typhoid fever at his home in Philadephia, but we are glad to say that he is now on the road to recovery.—The Society for the Promotion of Industrial Education which held a meeting in Boston in November, brought a number of '85 men to the Hub,—Richards who was president of the society, C. R. Allen who is head of the Technical High School at New Bedford, Lyon who has general charge of the apprenticeship schools of the Westinghouse Electric & Manufacturing Co. and Tom Fry of the Sullivan Machinery Company, Claremont, N.H., who is much interested in the movement. A number of classmates were hastily collected at the Exchange Club, but because of previous engagements, neither Richards nor Allen were able to be present. There were about a dozen men there and it was a very happy reunion, indeed.—In Mr. Cattell's *American Men of Science*, which contains the names of a thousand men in the first rank of pure science in this country, the chemical department of the Institute has so many men of high rating that the Institute "easily leads" in chemistry. All '85 men are proud of Talbot's work in organizing and adminstering this department, but few would fully realize the ability he has shown in this direction were it not for such impartial estimate as the above. It is to be understood that in this report only men of pure science are considered.—If you have not laid in your winter supply of shovels yet, see the "Robertson" brand advertised in this issue and don't be happy until you get one or more.—Bert Pratt has taken to curling this winter and the report comes to us that he plays it as successfully as he plays golf.—The Congress of Technology which is to commemorate the fiftieth anniversary of the granting of the charter to the Institute, was suggested by Little as a means of calling the attention of the public to the intimate relationship of the Institute to industry.

1887.

EDWARD GALBRAITH THOMAS, *Sec.*, 36 High Street, Brookline, Mass.

Jules Cameron and his family are on a six weeks' trip to Panama and the Carribean Sea.—Coburn, however, is our champion traveler. He covered 70,000 miles during the year 1910, visiting Canada, Mexico and every state in the Union except seven.

1888.

WILLIAM G. SNOW. *Sec.*, 1108 Penn Mutual Building, Boston, Mass.

B. R. T. Collins has resigned from the Stone & Webster Engineering Corporation and is specializing as a fuel oil engineer with headquarters at 19 Congress Street, Boston.—William H. Gerrish is now smoke inspector of the State Board of Gas and Electric Light Commissioners with offices at 15 Ashburton Place, Boston, and residence in Malden.—The following is taken from one of the Boston papers of December 2:—

Because of the onerous duties now imposed on President Mellen of the New Haven and Boston & Maine roads the position of assistant has been revived and H. J. Horn has been chosen to fill the position. Mr. Horn is a graduate of Tech and was employed under Mr. Mellen during his presidency of the Northern Pacific in the operating department and in the coal department of that company, and made an enviable record for efficiency. He has of late been employed as assistant general manager of the Chicago, Burlington & Quincy road, west of the Missouri River. The rise of Henry J. Horn in railroad circles has been almost meteoric. He was born in St. Paul, Minn., and is the son of H. L. Horn, a prominent lawyer of that city. He was graduated from Tech in 1888, entered the service of the Northern Pacific Railroad as draughtsman at $60 per month. In 1893 he was made road master and supervisor of bridges, and two years later division superintendent. In April, 1904, he was made general manager of the system.

1889.

WALTER H. KILHAM, *Sec.*, 9 Park Street, Boston, Mass.

William S. Johnson has been engaged to report upon the improvement of the water supply of Hyde Park. W. W. Lewis, '89, is chairman of the Water Board. He recently delivered addresses on the subject of water supply before the Weymouth Board of Trade and at the Braintree Forum.—Jasper Whiting writes: "As you know, I have been very much interested during the last few years in the development of a new process for the production of bleaching liquor and caustic soda by electrolytic means. After many trials and vicissitudes, a small plant was erected about two years ago at Rumford, Me., and since that time it has been repeatedly enlarged until now it is working successfully on a large commercial scale. In looking after the construction and operation of this plant, I have traveled between Boston and Rumford, a distance estimated to be over 25,000 miles, and as the scenery along the way began to get tiresome, I recently decided to change my route and start off on a journey of equal length, but in another direction—this one to the Far East—China, Japan, India, and all the rest. We expect to be away about a year and as we have no intention of keeping to the beaten track, I hope on my return to be

able to write you a letter of our experiences which will be of more interest to our classmates than is this one. In the meantime, I am leaving the management of our plant in the able hands of three Technology men of the best sort,—Hamblet, '02, Neale, '06, and Farwell, '06. You see I have been loyal to my *alma mater* in choosing my assistants. I hope to be with you at our class dinner next February, but if I am not, please remember me warmly to all the fellows."—Hollis French writes: "We have been extremely busy and prospects for the winter and next year are admirable. We have recently completed plans for all the engineering work on the Perkins Institution for the Blind, which I may have mentioned to you last time. These contracts are going to be let next week. We have also just finished the work for the new Boston Psychopathic Hospital, which is a state institution and connected with the Boston State Hospital, for whom we have also finished some work. This latter institution has planned an immense development which is going to require a large amount of engineering work, including a central power station, etc., and this we are working on at the present time in sketch form. The reinforced concrete factory for the Hallet & Davis Piano Co. at Neponset is just about to be turned over to the owners, who are very much pleased with it. We are drawing plans for some large reinforced concrete shoe manufacturing buildings, a power plant and making sketches for a warehouse. We are also doing the engineering for the new Boston Custom House tower, and are installing the latest type of low pressure turbine in the station of the Cambridge Electric Light Company, which will double the capacity of that plant. I believe this will be the first low pressure turbine plant in New England; or, at any rate, one of the first few. A number of very interesting engineering problems are involved in this Cambridge work. I try very hard not to allow business to interfere with pleasure, but I find it a little difficult of late years to get in quite as much shooting and sailing as I used to."—The *Electric Railway Journal* has the following:—

Mr. George W. Rounds, whose appointment as general superintendent of the Tacoma Railway & Power Company, Tacoma, Wash., was announced in the ELECTRIC RAILWAY JOURNAL of October 8, 1910, was graduated from the Massachusetts Institute of Technology in 1889. He became associated with Thomson-Houston Company on railway construction work at Nashville, Tenn., and Concord, N.H., after completing his college work, and remained with the company several years. Mr. Rounds served the Union Street Railway, Dover, N.H., as superintendent after resigning from the Thomson-Houston Company, and in 1896 he became connected with West Roxbury & Roslindale Street Railway, which absorbed the Norfolk Central Street Railway, Dedham, Mass., and was in turn taken by the Norfolk Suburban Street Railway, and then the Old Colony Street Railway. He was connected with this group of companies for about six years as superintendent. In 1902 he became manager of the Canton-Akron Railway, which is now operated

by the Northern Ohio Traction Company. After serving about three years with this company he became connected with Stone & Webster, Boston, Mass., going first with the Houghton (Mich.) Street Railway and then with the Terre Haute Traction & Light Company as general superintendent. In 1907 Mr. Rounds was appointed manager of the Savannah Electric Company in charge of the railway department. Early in 1910 he was made general superintendent of the Savannah Electric Company, from which position he resigned to go to Tacoma.

—Lewis has been busy solving the railroad problems of Hyde Park; he has proposed a plan for improving the railroad station and its approaches, and has been engaged by the town to plan a route through the town for the Boston & Providence Interurban Electric Railroad. As chairman of the Water Commissioners, he is just now engaged in the preparation of a report on proposed improvements in the town's water supply. During the summer he has been busy on the First Congregational Church building committee, who are erecting a fine new stone church and Sunday School building, which will be ready for opening in January and he invites all '89 men to inspect the plant which has been designed by Kilham & Hopkins.—Thorp spent two months of last summer with his family in Germany and Switzerland.—What the secretary wants from '89 is news, "all the news that's fit to print." The above items were extracted from his overmodest classmates only by physical force. If you are interested in this column send in anything you have. THE REVIEW will take it.—In answer to the secretary's query as to his work, Sauveur has kindly sent the following, which is of great interest. Certainly not all Tech graduates can show so great a record of achievement:

In 1886 Doctor Sorby, the highest microscopist, read a paper before the Iron and Steel Institute, in which he described the structure of iron and steel as revealed by the microscopical examinations of polished and etched specimens. To the reading of this paper must be ascribed the origin of the science now known as metallography.

Doctor Sorby's work attracted some attention and the subject was taken up by a few scientists and metallurgists in France and Germany. In America, however, no one seemed to realize the great possibilities of the new method of testing and investigations until I was asked in 1891 by the general manager of the Illinois Steel Company at Chicago to take up the subject. I was provided with a bare room in the chemical laboratory, an old-fashioned microscope and a barrel to serve as a table while the carpenter was instructed to construct a more adequate and ornamental support for my instrument. These modest beginnings were the origin of Applied Metallography in the United States.

I devoted five years to the development of this laboratory and that period was marked by great progress in the advancement of the new science. The interesting and important results obtained in Chicago and elsewhere attracted the attention of other steel makers and the equipping of metallographical laboratories soon started. Corey, now president of the United States Steel Corporation, made a special trip from Pittsburg to see the results we were obtaining.

In 1896 when John W. Gates was made president of the Illinois Steel Company, metallography received a severe setback at South Chicago, for the metallographical laboratory was closed on the ground of being an ornamental but useless feature, and the man in charge thanked for past services.

In 1896 I established in Boston, "The Boston Testing laboratories" continuing to devote to metallography a large portion of my time. I remained manager of these laboratories until 1905. In 1898 I founded *The Metallographist*, a quarterly review devoted to the advancement of metallography. It was very kindly received and undoubtedly contributed powerfully to the progress of the science. In 1904 the publication was made a monthly and its title changed to *The Iron and Steel Magazine*. Metallography continued to receive special attention in its columns.

In 1898 I delivered a lecture on metallography at Harvard University and the following year was offered an instructorship in metallurgy. In 1901 I was made assistant professor and in 1906 professor of metallurgy and metallography. From 1898 to 1903 I was also lecturer on Metallography at M. I. T.

Since the American beginning at South Chicago in 1891 metallography has progressed so steadily that it is now considered by most steel works and many other industrial establishments as necessary to the manufacture and control of metals and alloys as chemical analysis. The microscope is in daily use in more than three hundred industrial laboratories for the examination of metals, and metallography is taught in practically every technical school in the country.

The scientific importance of metallography has kept pace with its industrial development and to the study many scientists of renown have devoted a great deal of their time. Metallography has lifted the veil which was hiding from our view the true nature of metallic alloys.

I have written over one hundred papers or articles on metallography and related subjects. Some of them have been received most kindly and have perhaps constituted a progress in the advancement of the science.

I designed some special microscopes for metallographical work which are quite universally used in this country.

—Pike writes: "Mrs. Pike and I took quite an extensive tour in Europe this summer from Scotland down through England, France, the Black Forest, Switzerland and North Italy. We had the disagreeable experience of being detained in New York Harbor several days on account of a suspected cholera case. I have just been elected treasurer of the Rotary Club of Philadelphia, a newly formed business men's club."—Orrok writes: "Last summer I went to Europe with the Mechanical Society as guests of the Institute of Mechanical Engineers. We had beautiful weather and a reception which couldn't be beaten. Birmingham and London, three days each; special trains, fine excursions and most of the big men in England were there. W. C. Unwin has aged a little, but otherwise is the same as when he lectured at Tech a few years ago. Lodge, Burstall, Captain Sankey, Patchell, Merz and the other big engineers made us feel at home, and we had entreé to all the works. There were a bunch of "Tech" men on the trip. Then I had three

weeks on the Continent and an extra week in England and Scotland. Turbine manufacture was what I was investigating. Business in New York is slow, but I think is picking up a little. I have lectured twice this year at Beloit, Wis., and the Modern Science Club in Brooklyn, and am invited to lecture at New Haven before the Mechanical Engineering Society of Sheffield." Orrok read a valuable paper on "Transmission of Heat in Surface Condensation" before the American Society of Mechanical Engineers in December.—The annual dinner will be held on the last Monday in January, probably at the University Club, Boston.

1890.

GEORGE L. GILMORE, *Sec.*, Lexington, Mass.

The address of F. W. Crosby is 501–504 Denigree Building, New Orleans, La.—Charles Fitts is at 523 Railway Exchange, Chicago, Ill.—On November 15, at a meeting of the Boston section of the National Consolidated Gas Association, F. P. Royce, who is now with Stone & Webster, delivered an address on "The Commercial Department in the Development of Satisfactory Relations with the Public."—E. F. Bragg has been interested in building a dam in the Millers River at South Royalston, Mass. Bragg owns a number of water privileges in that section and in November came in competition with other parties who were building a dam in a similar position. We understand that the matter has not yet been settled as to who had the water rights at that location.—Charles Hayden, of Hayden, Stone & Co., who has just returned from a trip to the various porphyry properties, says: "At Chino the continual development of extensions of ore bodies which now show over 35,000,000 tons, of which 70 p. c. is to be extracted by steam shovel, is more than gratifying. The mill should be ready for operation about August. At Miami the new eight-section 2,000-ton mill is so near completion that it is believed that six sections will start early in January. The mine has been well opened for extraction. Inspiration has certainly opened up a very extensive ore body the past year and bids fair to extend its tonnage still further as development continues."

1891.

HOWARD C. FORBES, *Sec.*, 88 Broad Street, Boston, Mass.

Luis Francisco Verges died December 10, 1910, at his home in Wellesley Farms, Mass., after a short illness from a heart trouble of recent development. He was born at Arroyo, Porto Rico, May 31, 1869, the son of Eugene M. and Adrienne R. Verges. In 1876 he went to Spain, and attended a Jesuit school at Porta

Santa Maria for seven years. He came to this country in 1884 and prepared for Technology at the Allen school in West Newton. Entering with the class of '91, he took the course in civil engineering. After graduation he spent a year as assistant in civil engineering at the Institute, and then returned to Porto Rico, where he entered actively into the sugar business of his father. Later he built up and made profitable several other sugar plantations. At the time of his death his sugar interests are shown by the positions that he held. He was a director in the Columbia Sugar Company, the Santa Isabel Sugar Company, the Machete Sugar Company, the Borinquen Sugar Company, the Providencia Sugar Company, all located in Porto Rico. Early in 1910, he had taken an active part in forming the Association of Sugar Growers in Porto Rico, of which body he was vice-president. The purpose of this association was to improve the production of sugar by establishing experimental stations where various ideas and new methods might be tried out. His home while in the United States was at Wellesley Farms where his family consisting of his mother, father, two sisters and two brothers survive him.—Garrison sends the following report about the Choralcello:

During the past few months we have been developing our single manual instrument, one of which has just been sold to a church in Portland, Me., where the greatest satisfaction has been expressed in regard to its performance. We have also completed the application of a pneumatic player for both the single and the two manual instruments and can furnish these two types with or without self-player. A music department has been added at our factory where we adapt music to our sustained-tone instrument and where we cut our own rolls and are building up a library of music. E. G. Thomas, '87, has been actively engaged in the development of this department on its mechanical side. At our salesrooms in the Colonial Building, 100 Boylston Street, can be seen these instruments and at present there is a daily concert at 3 p. m. where we are pleased to have those call who are interested to do so.

—Hersam writes from Berkeley, Cal.:

I wish you could make everyone know how important it is to have the prospective Panama-Pacific International Exposition for 1915 held out here at San Francisco. The city and the state are extremely desirous of securing it here on the coast, and will do well with it if given the opportunity. It will be an added reason, too, for you men who are East to come West, once in a while, and look over towards China and Japan, or Alaska, or South, if you prefer. At any rate, speak a good word for California, for she will do well with the nation's choice if she is granted it.

1893.

FREDERIC HAROLD FAY, *Sec.*, 60 City Hall, Boston, Mass.

FREDERIC H. KEYES, *Asst. Sec.*, 88 Broad Street, Boston, Mass.

On November 18, 1910, the class held an informal meeting and dinner at the Technology Club, Boston, Mass., which was attended

by the following members: Baxter, Belcher, Bemis, Breed, Crosby, Cutler, Dawes, Densmore, Fay, Glidden, Keith, Keyes, Morss, the three Pages,—E. S., Edward and W. B.,—Pevear, Spofford, Taintor, Wallis and Thorndike. After dinner Spofford gave a very interesting lecture covering his trip with Professor Jaggar to investigate the damage and effect of the earthquake at Costa Rica last May. Spofford took this trip particularly to note the effect of earthquakes on different types of structures, and in connection with his lecture showed many very interesting illustrations of the disastrous effect on structures of steel and concrete not properly designed to resist such action. Spofford also described and gave illustrations of buildings constructed with wooden frame of special design, in combination with brick walls, which did resist the earthquake shock more or less successfully, indicating the desirability of using comparatively light wooden frame buildings instead of heavy stone or masonry construction except in the form of arches. The trip was extended to take in the Canal Zone, parts of the work being observed under most favorable conditions through the hospitality of Colonel Goethals. —H. W. Alden writes that the business of the Timken Company devoted to axles for automobiles, has been separated from the Roller Bearing Company and a new company was organized in July, 1909, known as The Timken-Detroit Axle Company to handle this branch of the business, with a large plant in Detroit. Alden is a stockholder and director in the new company, and is actively engaged in the management, holding the position of chief engineer, and also acts as consulting engineer for the Timken Roller Bearing Company of Canton, Ohio.—The Mexican revolution as it appeared to an American on the spot, is described by Charles V. Allen in a recent letter to the assistant secretary, as follows:—

> Your letter arrives as the revolution in Mexico is rather fresh in our minds. In Mexico city it first appeared by a demonstration on the part of the students, against the Americans, resulting in a few being insulted and some broken windows. This was a result of the lynching of a Mexican in Texas. This spread to Guadaljara and a few other places. The result of a federal investigation developed a plan to start a real revolution and overthrow the government on November 20th. Were it not for the first demonstration the real revolt might have been more of a surprise and resulted more seriously. As it is the government has been very well able to handle the situation and at this writing the cities are all quiet and the fighting confined to the country in the State of Chihuahua. The whole revolt was too poorly organized to accomplish the government overthrow. The cause of discontent is due to the graft of those in power. The effect is to depress business, but affairs will shortly be normal. Fowle, '93, ought to have a few words for you as he was in the center of one of the combats.

—A. F. Bemis has just been elected to the board of aldermen, Newton, Mass., from the Chestnut Hill district.—Lyman A. Bowker has just been reëlected for another year to the board

of aldermen, Waltham, Mass.—Leighton Calkins of the law firm of Bond & Calkins, 25 Broad Street, New York, is president of the Plainfield (N. J.) Country Club, of which city he is a resident. He is also a governor of the City Hospital and a trustee of the local Anti-Tuberculosis League. For several years he has served on the governing boards of the United States, New Jersey, and Metropolitan Golf Associations and was a member of the committee which framed the present rules of golf. He devised the system of golf handicapping now generally used, and drafted the new constitution for the United States Golf Association.—Philip B. Day, is now in the employ of the Great Western Automobile Company of Peru, Ind.; at the present time is in San Francisco, Cal.—J. W. Ellms writes that last summer he was a member of a committee on science, education and historical relics for the Ohio Valley Exposition held in Cincinnati and intended to advertise the natural resources, the manufacturing and industrial activities of Ohio and the states immediately south. Ellms has been directly interested in the design and construction of a large working model of one of the movable dams now being constructed by the United States government across the Ohio River below Cincinnati. He is president of the local section of the American Chemical Society at Cincinnati, which held a very successful joint meeting with members of other sections from Indianapolis, Louisville, Cleveland and Chicago last month, President W. D. Bancroft of the National Society and President Ira Remsen of Johns Hopkins University being present. Ellms is making a specialty of water purification and has lectured more or less on this subject before various clubs and societies during the past year.—Dr. Augustus B. Wadsworth's address has been changed to 114 West Fifty-fifth Street, New York City.—Edward Page has returned to Boston and is connected with the New England Gas and Coke Company, his address being 501 Shawmut Bank Building.—The address of Mrs. Herbert R. Moody is 280 Convent Avenue, New York City.

1894.

PROF. S. C. PRESCOTT, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The Lowell papers have recently announced the fact that H. S. Duckworth is soon to leave the Hamilton Woolen Company of Lowell for a position in charge of a large textile establishment at Haverstraw, N.Y. Duckworth has been engaged in various lines of work pertaining to textiles since undergraduate days. In his summer vacations while a student he worked at the Pacific Mills in the chemical laboratory and dyehouse, and after gradua-

tion took up the same line of work as his profession. Several years of this work were spent at the Cocheco Mills in Dover, N.H., where he began work as a chemist, but later became the director of the laboratories, dyehouse, etc., of the company. Following this he went to the Hamilton Woolen Company at Lowell in charge of their large plant and here he has remained until the present. During these years Duckworth has been a pretty regular attendant at our annual meetings and it is with very great regret that we learn of his removal to a more distant point. However, Haverstraw is not so far away but what we may hope to see him on frequent occasions. The best wishes of the whole class will follow him in taking up his new and important work.—F. A. Schiertz is at the present time making the final stages of a tour around the world. After being engaged in a variety of metallurgical works from Montana to Mexico, Schiertz was selected to take charge of some large smelting operations in China at Hunan. After two years here Schiertz started on a tour eastward to visit his old home and relatives in Germany and after some time spent there the latest report is that he is on his way to America. He will undoubtedly visit the Institute soon after he arrives, and possibly if time will permit we may get together a little bunch of '94 men to meet him.—H. N. Parker is another '94 man who has recently returned to Boston after a somewhat varied and interesting career. Beginning with work as a health officer in a New Jersey town Parker accepted a sanitary position with the Geological Survey and in this capacity was engaged on a number of investigations at various parts of the country, the most extensive being perhaps a sanitary survey of the Chesapeake Bay. Since resigning from the survey Parker has been one of the constructing engineers for the Bithulithic Company, but as midwinter is a bad time to put down pavements in New England, his time for a few weeks is less fully taken up than formerly, and it is a great pleasure to see him around the club and elsewhere in Boston.—Sayward has become more or less prominent through his dramatic writings and as a member of an amateur theatrical company or troupe at his home in Wayland. One of his sketches has recently been presented at the Bijou Dream Theater, although not in exactly the form in which it was written. Sayward has long had the dramatic instinct and from the work which he has done one may predict that he will be heard from in this line of work in a more pronounced way in the future.—F. H. Clark is engaged in civil engineering work in and about Brookline. Apparently he is too busy to look up his old friends, but the secretary sees him occasionally as he hurries from place to place on various kinds of work.—The secretary has recently received a letter from H. M. Chase who is vice-president of the Investment Trust Company of Wilmington, Del. He sent best regards to the '94 outfit.

1896.

CHARLES E. LOCKE, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

Charlie Morris spent three days in Boston in November taking his annual United States physical test. He elected horseback riding. Up to present writing we have not heard whether he has fully recovered or not.—It is not proposed to hold an annual meeting of '96 men this year, but at the alumni dinner on January 4, it is expected that a sufficient number of men will be present to talk over the matter informally and appoint a committee to make arrangements.—The men of '96 in Massachusetts appear to be in a good position to help the cause of enlarged grant of state aid from the legislature this year. The secretary has received a number of replies from various men and in almost every case the man has either already spoken to his representative or has engaged to do so in the near future.—Senator E. C. Hultman is not a member of the Massachusetts legislature this year. Three years were apparently sufficient, or else he foresaw the Democratic landslide and got out from under.—One very striking thing regarding the men of '96 is their permanency. In looking over the lists of addresses which are now coming in for the new register of graduates, the secretary has not yet found an instance of a change, from which it appears that the fellows are now well settled in permanent positions, and that their roving days are over.—Owing to the short time since the last REVIEW these notes are not so full as the secretary would wish.

1897.

JOHN ARTHUR COLLINS, *Sec.*, 67 Thorndyke Street, Lawrence, Mass.

It is none too early to think and plan about what we are going to do in 1912 towards celebrating the fifteenth (my, but we are getting to be "old boys!") anniversary of our graduation. Those who were present at the decennial of the class will recall the good times they had; but the number of participants was very small. We should make a better showing in 1912. To this end it is planned to have all the Boston and vicinity men, in fact, any and all '97 who will come, meet at an informal dinner in Boston early in January. A committee will then be formed and some line of action agreed upon. If any of the class have any suggestions to offer send them on to the secretary who promises to keep them in cold storage until the proper time to bring them out.—Howard A. Noble (II.) was married on Wednesday, December 7, to Miss Katharine Babcock of Pittsburg, Pa. They will be at home after January 1, at 1235 Shady Avenue. Noble is with the Pittsburg Spring & Steel Co.

1898.

E. F. Russ, *Sec.*, 70 High Street, Boston, Mass.

It will be of interest to the class to know that R. Winthrop Pratt, engineer of the Ohio State Board of Health, has become an author in collaboration with Leonard P. Kinnicutt, of the Polytechnic Institute, Worcester, Mass., and C.-E. A. Winslow of our own class, has written a book on Sewage Disposal that bids fair to become our standard work on this important subject.—Walter G. Zimmermann is now in Duluth, Minn.—Edward M. Taylor is with the Roebling Construction Company, New York City.—Benson B. Priest is with the American Bridge Company also in New York.—Ray C. Faught is with the General Electric Company, Baltimore, Md.—We note that D. W. Edgerly is now in New York at 17 Gramercy Park.—Chester F. Drake is with the Pittsburg Filtration Works, Aspinwall, Pa.—William A. Marshall is now with the New England Gear Works, Boston, where he has been for a number of months.—George O. Haskell is now in Houston, Texas.—R. H. Danforth is with the United States Naval Experimental Station at Annapolis.—A. H. Tucker is with the Library Bureau, Ilion, N.Y.—Prof. F. L. Bishop is now at the University of Pittsburg.—George E. Mathews can be found care of Frank M. Andrews & Co., Waldorf Astoria, New York City.—Leroy E. Peavey is in Wellesley Hills, with Babson Reports. —David L. Wing is with the Bureau of Corporations, Washington D.C.—On Saturday, December 3, Dr. S. F. Jones was married to Miss Cordes in Denver, Col.

1899.

H. J. Skinner, *Sec.*, 93 Broad Street, Boston, Mass.

Sutermeister has resigned his position with the United States Forest Service and has returned to his former one as chemist for S. D. Warren & Co., Cumberland Mills, Me.—Tucker is now with the Union Copper Company, Gold Hill, N.C.—Loomis, of the Packard Motor Car Company, was in Boston during the fall.—Hinckley, engineer of tests for the New York, New Haven & Hartford Railroad Co., has been transferred from New Haven to Boston. His office is in the South Station.—Packard has left the United States Patent Office and is now with Kiddle & Wendell, 115 Broadway, New York City.—Gilpin is with Gilpin, Van Trump & Montgomery, Wilmington, Del.—Herman is with the Southern Railway Company, with offices at Washington, D.C.—The following changes of addresses have been received:—Lawrence Addicks, United States Metals Refining Company, Chrome, N.J.—Thomas W. Bailey, 901 Colcord Street, Oklahoma City, Okla.—Miss Bertha L. Ballantyne, 101 Mt. Vernon Street, Boston, Mass.—

Walter R. Bean, 11 High Street, Woodbury, N.J.—W. W. Bonns, Highmoor Farm, Monmouth, Me.—Herbert M. Case, 5 Jerome Place, Upper Montclair, N.J.—H. M. Cushing, 681 Ellicott Square, Buffalo, N.Y.—Timothy J. Driscoll, 230 North Second Street, Harrisburg, Pa.—James B. Ellery, 532 Jefferson Street, Gary, Ind.—George C. Glover, 8 Beacon Street, Room 74, Boston, Mass.—A. W. Grosvenor, 311 Bank Block, Fort Wayne, Ind.—Benjamin S. Hinckley, 162 Park Street, Newton, Mass.— Harry G. Johnson, P. O. Box 5077, Boston, Mass.—William B. King, 44 Baker Avenue, Beverly, Mass.—James G. Leiper, Jr., 17 Summit Street, Philadelphia, Pa.—Clarence A. Moore, 81 Walnut Street, Arlington, Mass.—Albert F. Nathan, 2 Rector Street, New York, N.Y.—Herbert H. Riddle, care of Riddle & Riddle, First National Bank Building, Chicago, Ill.—Roland W. Stebbins, University Club, Tacoma, Wash.—Philip Stockton, 17 Court Street, Boston, Mass.—Frank R. Swift, 394 Pearl Street, Buffalo, N.Y.—Lewis R. Whitaker, 45 East Seventeenth Street, New York City,—Charles F. Wing, Jr., 36 Purchase Street, New Bedford, Mass.—John W. Woollett, 82 State Street, Albany, N. Y.

1900.

INGERSOLL BOWDITCH. RICHARD WASTCOAT.
GEORGE C. GIBBS. PERCY R. ZIEGLER.

N. J. NEALL, *Sec.*, 12 Pearl Street, Boston, Mass.

The members of our class will be pleased, if not startled, to hear that the stork visited the home of John F. Wentworth, (XIII.) on November 11 and presented him with triplets: Barbara Blair arriving at 12.30, William Ezekiel at 1, and Laura Elizabeth at 1.30. The latest reports are that the family is in the best of health and Wentworth seems unconscious of the double distinction which he enjoys in class matters not only to have the class boy, but also the class triplets. Wentworth certainly deserves a cup. —T. E. Penard (VI.) and N. J. Neall, (VI.) both attended the summer convention of the New England Section National Electric Light Association at the Griswold, Eastern Point, New London, in September. Penard, in his work with the Boston Edison Company has active control of the switchboard design and other central station problems and has done quite important work since leaving Tech. The switchboard at the L Street station is a very interesting piece of work and unique in this respect, that it was built under the direction of the Edison Company and thus establishes a standard arrangement of its own. Furthermore, the switchboard practice of this company is said to be very satisfactory and successful. It is not unreasonable to hope that Penard will one of these days advance from his present position as assistant to the engineer, to head of some department. It was very much like

old times in Course VI. for Penard and Neall to get together and they both can testify to a very successful visit at the convention. The meeting was not at all a dry one.—S. B. Miller, (X.) has been transferred to the Wilmington (Del.) office of the duPont Powder Company and took up his duties in the new place on December 15. The Marquette works, of which Miller has formerly been assistant superintendent, are being closed down. Miller is reluctant to leave the northern country as he has been very happy there owing to the climate being particularly beneficial and Mrs. Miller has her home there. The step, however, indicates an advancement for him and it is with best wishes for his success that his friends see him returning East. Miller recently received a silver loving cup as a prize for having done especially meritorious work in the output of the Marquette plant, thus rivaling the other constituent stations of the duPont Powder Company.—The first class dinner of the current year was held at the Technology Club on November 21, 1910, the following men being present: Ashley, Bowditch, Burns, Draper, Emery, Gibbs, Reardon, Richardson, Russell, Wentworth and Ziegler. The question of the class book was brought up and discussed. It is hoped that before the next dinner the book will be in such a shape that we can tell how much it is going to cost and how it should be printed. It is planned to hold three or four more dinners during the winter and two members of the class have promised to give illustrated talks on some part of their work. In this way we hope this year to hear from Fred Lawley on yacht design and from Jennings on interior decoration.—Bowditch, treasurer of the class committee, reports as follows:—

APRIL 1, 1909, TO DECEMBER 1, 1910

Receipts

Balance received from H. E. Osgood	$39.25
Contributions from members	255.80
	$295.05

Expenses

Paid bills turned over by H. E. Osgood	$46.62
Paid expenses Tech reunion, June, 1909	29.73
Paid expenses for preparation of class book	69.81
Committee expenses	10.11
Balance on hand December 1, 1910	138.78
	$295.05

—Batcheller (III.) has gone West again and is now located at Brittania Beach, B.C., with the Brittania Mining & Smelting Co.

—Cutting has likewise taken a long jump and is now to be found care of Chief Quartermaster, Philippine Division, U.S. Army, Manila, P.I.—1900 men are becoming well represented in the Orient for Tiffany who is now Capt. George S., U.S.A., is also in Manila.—Oxnard writes that Leary is now in charge of a surveying party for the Bangor & Aroostook Railroad at Houlton, Me., and is very much liked by his chief engineer.—It is reported that Sperry (II.), who is manager of the Savannah Electric Company, one of the Stone & Webster plants, has made quite a success of his work and has just announced his engagement, although we are not advised of the young lady's name.—Harry Lesley Walker (IV.) has been compelled to place the management of the Atlanta office of his firm, King & Walker, in the hands of a superintendent and move to New York City. A good portion of Walker's time is spent in the South as King & Walker have a number of buildings under construction in that vicinity.—Collier (VI.), who is still contract agent for the Georgia Railway & Electric Company, says that he is so busy doing his work and keeping somebody else from taking his job, that nothing particular happens to him. We learn, however, that he was chosen vice-president of the newly formed Georgia section of the National Electric Lighting Association and that he has also been appointed by the National Electric Vehicle Association, chairman of the Georgia Membership committee, so that it is quite clear that Collier is an active man, however modestly he may disclaim it. Collier is a very helpful correspondent in class matters and always wishes to be remembered to his old friends. Here's hoping that his coöperation in this work will be contagious.—Leonard (I.) writes us that Bill Angus was married in the latter part of November.—Course VI. men will remember Shumaker who graduated with us, although he began as a '99 man. Shumaker, who is now superintendent of traffic of the Telepost Company, with offices at 225 Fifth Avenue, New York, writes Neall as follows:—

> I wish to explain that while I did not graduate till 1900, I was three years with the class of '99 and always think of that class as mine. I know few of the class of 1900 outside of Course VI. I am offering this not because I refuse to be classed as a 1900 man, but as an explanation of my relative lack of interest in 1900 matters. It is not at all bad to be claimed and feel at home in two classes; but it is a good deal like having two homes—you hardly know where to live. I have seen none of the 1900 men, at least none that I know as 1900 men, except Charley Corbett; I am not sure that he is 1900. He started as a Course VI. man with '99, but changed to Course IX. Do not know for sure but think he was out one year and graduated with 1900. He is in New York, advertising manager for some magazine, and I see him once in a long while.

—Russell Suter (I.) has moved his headquarters to Albany, N.Y. He is still with the Water Supply Commission.—Tudbury (I.) is now located at 33 Main Street, Utica, N.Y.—Bender has changed his address to 6011 Kimbark Building, Chicago, Ill.—Sohier is at

Concord, Mass.—Neall announces the termination of his partnership with Thomas, '93, at the end of the year in order to practice independently. He will retain his present office and follow the same class of work as before.—The class should be grateful to Davis for his cheerful communications; in fact, he might appropriately be called "contributing editor." His latest (by request) is as follows:—

And as a reward of merit, I will let you into a new discovery of mine. Only my closest and dearest have been given an option on it. *A corn cob pipe is the best smoke.* I've been trying them all—for a decade—and I know. I've tried the lowly clay, the natty briar, and the luxurious meerschaum. I've experimented with the South African calabash and Ottoman hookah. I've pulled at Indian tomahawks, shin bones and old hickory. But they are all temporal and transient. The firm and true, unfailing and fathomless, the sympathetic and inspired, the ancient and honorable, the corn cob for me.

—Dick Wastcoat (I.) has finally settled down at Taunton and writes interestingly about his new work as treasurer of the Evans Stamping & Plating Co., as follows:—

Regarding news about the other fellows, I have not seen any of them. When I wrote the class letter I used to work in my own advertisements, but as we have entirely sold our output for 1911 and probably more than we can manufacture with our equipment, there doesn't seem to be much need of advertising. Mr. Van Bibber and myself obtained control of this concern last July and we have entirely reorganized the same. The name is entirely misleading at the present time. The concern originally started manufacturing nickel stove trimmings for stove foundries in this city, of which there are a large number. At the present time a number of foundries have put in plants and are doing the work themselves, which was originally done by this concern. Mill oilers are a relic of the business that was originally started in the factory in which we are located. This oiler is so constructed that there is a steady flow rather than a "squirt," and is used entirely in the textile factories, so that the goods which are being manufactured will not be covered with oil which is liable to spatter.

The "Paragon" gear is the last development of this concern, which has met with tremendous success. Last year it was impossible to fill all the orders received, with the amount of machinery on hand. This year we have already taken contracts from engine manufacturers for over two and one-half times the quantity turned out last year. The gear is attached directly to marine engines and is built in such a way that it rests on part of the engine bed, so that it becomes an integral of the equipment. We have added this year, some of the largest marine engine manufacturers in this country who will make the gear a part of their standard equipment.

If any of the fellows are ever in town I should be very glad to have them call to see me and take them through the factory and see what they think of our organization.

—Rondel Lewis died June 23, 1910. He leaves a widow.—The latest changes of addresses are as follows:—C. M. Leonard, McCormick Building, Chicago, Ill.—John B. Conant, 21 Vine Street, Somerville, Mass.—Albert B. Briggs, Room 239 South Station, Boston.—Isaac Osgood, 36 Osgood Street, North Andover, Mass.—Harry L. Walker, 35 Webster Avenue, Armour Villa Park, Yonkers, N.Y.—R. C. Simpson, 231 Forty-ninth Street, Newport News, Va.—Mortimer Silverman, 142 North Union Street,

Olean, N.Y.—Charles E. Sherman, 139 Main Street, Westerly, R.I.—A. G. A. Schmidt, National Equipment Company, 412 Monadnock Block, Chicago, Ill.—Arville C. Redman, 16 Ayrault Street, Newport, R.I.

1901.

ROBERT L. WILLIAMS, *Sec.*, 154 Magazine Street, Cambridge, Mass.

Henry R. Gilson writes from Economy, Pa., where he is engineer for the National Metal Molding Company, that he has four children, two boys and two girls; also that he has applied for eight patents.—Joseph D. Evans is in full charge for J. G. White & Co., New York, of the field work in the development of the Canadian Light & Power Co. and directs five hundred men.—Joseph A. Gund is president of the Gund Graham Company, stone and cement contractors, Freeport, Ill.—Frank B. Walker is located in St. Paul, Minn., and is resident engineer of the Great Northern Railroad.—H. H. Kennedy as division superintendent of traffic for the New York Telephone Company directs six men and eight hundred and seventy-five women.—Francis E. Cady is engaged in research work on the production and utilization of light. He has written an article for the *Electric World* on "Uniformity in the Photometry of Colored Light Sources." He has also delivered a lecture before the Philadelphia section of the Illuminating Engineering Society on "Selective Emission of Incandescent Lamps."—E. J. Proulx is engaged in hydraulic engineering at Glenside, Pa.—Donald A. Kohr manufactures paint, varnish, and tin cans. In reply to the secretary's question as to what he has done outside of his work, he says "Have been raising my family." He has two boys, three and four years and doubtless they keep him out of mischief if he does not them.—T. Frederick E. Reardon in the publication department of the General Electric Company works on technical publications and nameplate data for the entire company.—D. L. Ordway is assistant director of the research laboratory of the National Carbon Company.—Howard I. Wood as incandescent lamp engineer for the General Electric Company has the problem of maintaining the quality of the present product as well as research work to produce a new or improved product.—W. W. DeBerard has written an article in the *Journal of the Western Chemical Society* on "Some Aspects of Water Purification."—Edmund H. Brigham has recently become the proud father of a baby daughter.

1902.

F. H. HUNTER, *Sec.*, 75 Park Street, West Roxbury, Mass.

The first class gathering for the season was held at the Boston City Club on the evening of Tuesday, November 8, with twenty-five men present. Dinner was served and instrumental music and Tech songs added to the good cheer of the occasion. The date was set, unintentionally, on election day and some energetic scouting by Stillings brought in returns from time to time. Unfortunately, the Democratic landslide which these returns showed did not evoke unmixed enthusiasm. The feature of the evening was a talk by John Gordon upon his experiences in Egyptian and Soudanese campaigns of the middle eighties. Mr. Gordon, who is a brother of the Rev. Dr. George A. Gordon who preached 1902's Baccalaureate Sermon, told in a simple, vivid manner of leaving his boyhood home in Scotland to enlist in the famous Black Watch Regiment of the British Army. Soon his regiment was ordered to Egypt where it took part in the battles that won Lower Egypt and later in the campaigns against the Soudanese and the famous relief expedition, up the Nile, to Khartoum. The night march to Tel El Kebir, the battle of Suakim, and the experiences in a cholera camp were some of the events which were described, but the most exciting was the battle of Tamaia, where "Fuzzy Wuzzy bruk the Square." The entire talk was of unusual interest. The classmates present at the dinner were: Boardman, Bourneuf, Collier, Everett, Finneran, Fisher, Hall, Hunter, Mahar, Mardick, Millar, Moore, Pendergast, Joe Philbrick, Robinson, Ritchie, Shedd, Simpson, Stillings, Teague, Walker, R. F. Whitney, Whittet, "Doc." Williams, and Williston. —The class will hold other gatherings later in the season, but no dates are yet set. There will be a bowling party in Boston the latter part of January and a dinner is proposed for New York in February. Annual reports are being prepared by the secretary, and will be mailed, together with the usual "touch" for dues, early in January.—Robbie Pope was married on November 12 to Miss Laura Helen Fischer at St. Michael's Church, New York City. A reception at the home of the bride's parents, Mr. and Mrs. Philip A. Fischer, followed the ceremony.—Philip Whitney was recently made assistant professor of graphics in the Department of Architecture at the University of Pennsylvania.—Greeley reports a second son in his family. The name of this new scion of Course IV. is Roland Bradford Greeley and his birthday is October 22.—Joe Philbrick has a son, Joseph Edward, who saw light upon October 11. He is reported as making good progress in preparing for the entrance exams. at the Institute.—Robert Bass Mayo who arrived on November 5 is another addition to the '02 offspring.—Willard Morse's daughter, reported in the last

issue of THE REVIEW, is named Olive Goodell, and was born on the first day of July. Morse is now located with the American Smelting & Refining Co. at their Perth Amboy plant. His residence address is 233 High Street, Perth Amboy.—Wadleigh is now located at the Marine Barracks in Boston.—Butler has been transferred by Stone & Webster from Lowell, Mass., to Jacksonville, Fla.—H. L. Pope is at the West Works of the Pope Manufacturing Company at Hartford, Conn.—Cates is reported with the Ray Consolidated Copper Company at Ray, Ariz.—Sears has left the engineering staff of the Charles River Basin Commission and is with Lockwood, Greene & Co., the well-known mill engineers, at 93 Federal Street, Boston.—Millar has moved his office to 146 Summer Street, Boston.—Hadcock's residence address is 195 Davis Avenue, Brookline.—O'Neill has moved his home from Malden to Newell Avenue, Needham, Mass.—Don Belcher is with the Metropolitan Sewerage Commission, 17 Battery Place, New York City.—Hammond is back on a vacation after two years of work on the Isthmian Railroad at Panama.—Allbright is with the Sturtevant Mills Company, Harrison Square, Boston.—We quote the following from the daily press to show that '02 men are always up to date:—

Powder puffs must no longer be used in the barber shops of Montclair, N.J., according to an edict issued by Health Officer Chester H. Wells. Mr. Wells declares that the powder puff in barber shops is unsanitary, and hereafter the barbers will have to apply the talcum in some other way.

The use of sponges in barber shops is also barred.

—All the Boston men will be glad to know that Hooker has returned to town after completing his work in Salt Lake. He has been much missed from our '02 gatherings while in the West. He showed the secretary a letter from Brodie, who is selling machinery for the Sullivan Machine Company in Australia. His headquarters are Australasia Chambers, Martin Place, Sydney, New South Wales, but his work takes him to all parts of the Island continent.—McCarthy was recently chosen county surveyor of Clark County, Nevada.

1903.

F. A. OLMSTED, *Sec.*, Oregon City, Ore.

R. H. NUTTER, *Asst. Sec.*, Lynn, Mass.

H. S. Morse spent a few days in and around Boston early in October. He was looking "husky" and from his appearance it would seem that the climate at Louisville, Ky., agrees with him. On his way from Louisville to Boston he stopped over in New York and reported having had a very pleasant time at an informal dinner of 1903 men at the Technology Club of New York.—

There seems to be something about the Pacific Coast which appeals very strongly to 1903 men. Our secretary, F. A. Olmsted, has left Boston and is now with the Willamette Pulp & Paper Co., Oregon City, Ore.—Newman also has made a change and is located in Los Angeles, Cal.—Pulsifer's new address is Murray, Utah.—R. C. Tolman has become a member of the faculty at the University of Michigan.—On October 30 the marriage of K. W. Endres to Miss Helen Morgan Cross of Jenkintown, Pa., was announced.

1904.

EVERETT O. HILLER, *Sec.*, care of Pneumatic Scale Corporation, Ltd., Norfolk Downs, Mass.

ADDISON F. HOLMES, *Asst. Sec.*, Mass. Inst. of Tech., Boston, Mass.

The serious delay in the publication of the October REVIEW has proved a handicap to the secretary as that contained his first class letter and was relied upon for an introduction, as it were, and as an opportunity to appeal for news.—Rockwood has spread out and is now a member of the firm. His card reads quite naturally,—E. F. Rockwood, A.M., American Society Civil Engineers, chief engineer, New England Concrete Construction Company, 201 Devonshire Street, Boston. "Tammy" will build you anything that may be made of concrete.—We have received and note with heartiest congratulations the announcement of the marriage of Miss Carolyn Bushnell Allen of Cincinnati to Currier Lang. Mr. and Mrs. Lang will be at home after January 1 at 177 Joseph Campau Avenue, Detroit.—H. T. Kalmus has been made professor at Queen's University, Kingston, Ontario, Canada. A letter is due from the professor telling us of the relative merits of the German, American and Canadian universities as he has seen them.—It is reported that "Volts" Ovington is in France seeking a Blériot monoplane with which to become an expert and to return for next season's flying here. Ovington has always been flying a little higher than the average and we may look to him for remarkable achievements in this new line. He was last seen by the secretary taking high tension, high frequency shocks at the electrical show last winter and giving a very interesting demonstration of its peculiarities. He has been further heard of as president of the American Motor Cycle Association.—I quote part of an interesting letter from our class "kid," George H. Powell:—

About two years ago I had an opportunity to come with the Loomis-Manning Filter Distributing Company in the capacity of engineer for the company. We manufacture water filters of all sizes and for all purposes, but this isn't an advertisement so I won't dilate further. The work is interesting, congenial and has splendid prospects. Though not much related to Course XIII., yet the Tech course has been of great value and I have never regretted learning "my profession" as it were.

The only '04 fellows I ever see around here are Bartlett and Bascom, and it's mighty seldom I run across them. Bascom is with the Fayette R. Plumb Company. large manufacturers of small tools; and Bartlett is with the American Water Softening Company. I correspond regularly with S. A. McClung, '04, with whom I roomed at Tech, and he is practising law in Pittsburg. My other roommate, Charlie Homer, you probably know more about than I do, for I have seen him only twice since we left Tech and had only one letter. My engagement to Miss Mary E. Bousack of Philadelphia was announced last August. Though no date has been set for the wedding, we hope it will be within a year.

—Ernest L. Rupf announces the birth of a daughter, Ernestine Blanche, born November 28, 1910.—"Charlie" Hoy (X.) was in Boston during the late "Gas Show." He is managing successfully several gas companies in New Jersey.—The following changes of addresses have been noted lately: J. E. Cunningham, 2 Louisburg Square, Boston.—William H. Koppelman, 708 Commercial Street, Cairo, Ill.—F. K. Merriman, The Catholic University of America, Washington, D.C.—J. W. Roland, Isthmian Canal Commission, Toro Point, C.Z.—W. Dewitt Vosbury, care of Roberts Filter Manufacturing Company, Darby, Pa.—Clark D. Simonds, 224 North Twenty-fourth Street, Portland, Ore.—Edward F. Parker, 7 John Street, Reading, Mass.—L. W. Nickerson, 217 Pleasant Street, Brockton, Mass.—R. R. Newman, 607 Park View Avenue, Los Angeles, Cal.—William L. Doten, 80 Radcliffe Street, Dorchester, Mass.

1905.

GROSVENOR D'W. MARCY, *Sec.*, 246 Summer St., Boston, Mass.

Sidney L. Cole and Miss Eleanor Guenther Winther of Somerville were married on October 25. On the 27th of October James F. Fouhy and Miss Helen Frances Farrell were married at Somerville. These two lone items show good activity in the little town of Somerville, but what are '05 men doing in the rest of the world? —The secretary has been recently made secretary of Sampson & Murdock Company, Boston, and has not had time to go hunting for news, but expected the fellows to send in items about themselves and others better than they have done. Try to send in something interesting before March, for the next magazine number of the REVIEW.

1906.

RALPH R. PATCH, *Sec.*, 15 Lincoln St., Stoneham, Mass.

On account of the absence of the secretary and the illness of the assistant secretary class news has not had its proper attention in the REVIEW this month.—The principal items of interest refer to marriages and engagements which are as follows: Announcement is made of the marriage of Helen Frances Farrell of Somerville,

Mass., to James Francis Fouhy, on October 27, 1910. Mr. and Mrs. Fouhy will be at home on January 1, at 1018 Forty-Seventh Street, Brooklyn, N.Y.—A clipping from the *Cincinnati Inquirer* states that when Edward B. Rowe of Newark, Ohio, was a student at Technology he met Miss Hewlett of West Newton, to whom he has recently become engaged. His address is Newark, Ohio.—The engagement is announced of Miss Florence H. Dennis and Louis Kilham Tripp. Tripp is a government architect located in Washington, D.C. Miss Dennis is the daughter of Frederic H. Dennis of Newton Lower Falls, Mass.—A recent number of the *Boston Globe* contains an article on Miss Eleanor Manning, who has just been notified by the Gymnasium and Field Association at Smith College that her plans for a new boathouse for that institution have been accepted. The cost of the new boathouse will be $3,300. This adds to Miss Manning's reputation as an architect as she has already been quite successful in this line. Most of her professional work has been in connection with detached houses and city blocks at Lynn, Mass., where she resides.—C. R. Wilfley writes that his address has been changed from Hostotipaquillo, Jalisco, Mexico, to Barstow Mine, Ironton, Col. We are very grateful to Wilfley for getting out of a place with a name like that. We have wrestled with this name many times and there seems to be no way out but to set it to music and play it on a horse fiddle. Wilfley is manager of the Barstow Mine at Ironton, Ouray County, Col.

1907.

BRYANT NICHOLS, *Sec.*, 143 Garland Street, Everett, Mass.

W. W. BIGELOW, *Res. Sec.*, care J. R. Worcester Co., Waltham, Mass.

I. *On the Part of the Secretaries*

The secretaries are going to try a new plan of class correspondence. They believe that the chief cause of the failure of the former plan of having correspondents endeavor to keep in touch with a certain group of men, the division being made on a geographical basis, was that under that method a correspondent wrote letters to fellows whom he did not know personally, with whom he had no common interest, and frequently with whose faces he was not familiar. We believe that if we can devise a scheme whereby every correspondent knows every man he writes to fairly intimately, we shall be able better to get the result for which this plan was originated, namely, the securing of the largest amount possible of news concerning the men of '07. We have one idea in mind now, and we should be glad to receive suggestions along this line. If any man reading this, whether he be of the class of 1907 or not, has any ideas, we should be grateful if he would tell

us about them. The method which is finally adopted will be described in the next REVIEW. The letters from the secretaries, together with bills for class dues were sent out about January 1. Some results are evident already. Please help make the records of the secretaries complete and the bank account of the class larger by doing your part.

II. *Miscellaneous Notes*

On Saturday evening, December 10, an informal dinner of the '07 men in Boston and vicinity was held at the Technology Club, Boston. We had a good dinner, President Macomber presiding, after which "Ike" Litchfield told us many interesting things in his own bright and optimistic way about Tech doings among the Corporation, the alumni and the undergraduates. Then we went upstairs and had a good social time exchanging experiences. The following fellows were present:—P. R. Nichols, W. F. Kimball, E. E. Turkington, Ralph Hudson, George Norton, Alexander Macomber, Don Robbins, R. K. Taylor, Harry Hall, J. E. Garratt, Gilbert Small, Clarence Bowen, Walter Bigelow, "Tucky" Noyes, Leon L. Allen, Bob Albro, Charlie Allen, Sidney Wells, Bob Thayer, John Mahar, R. P. Stevenson (otherwise known as "Stealthy Steve"), H. W. Mahr, Harold Wonson and Bryant Nichols. It is the plan of the Boston bunch to hold informal dinners of this sort every other month. The next one will occur Saturday, February 11. Put that date down in your engagement book, and if you can be in Boston then, whether you receive another notice or not, come around to the Technology Club on that evening, and you will find a jolly bunch of your old friends. —Bob Albro is living at 452 Lake Avenue, Manchester, N.H.— Charlie Allen's address is 64 Cherry Street, Spencer, Mass.— Alvord is in Brunswick, Me., professor at Bowdoin College.— F. W. Amadon, 115 Howe Street, New Haven, Conn.—C. A. Bowen, 94 Canton Street, Lowell, Mass.—E. L. Chaffee, 109 Pearl Street, Somerville, Mass.—Harry R. Crohurst, 224 Huntington Avenue, Boston, Mass.—P. V. Dodge, 724 Ninth Street, North, Washington, D.C.—J. G. Barry can always be reached through his home address, 5 Buffum Street, Salem, Mass. In November he was with the Cortez Mining Company, Jacala, Hidalgo, Mexico.—A. H. Donnewald may always be reached through American Institute of Mining Engineers.—Dr. Joseph Struthers, Assistant Secretary, 29 West Thirty-ninth Street, New York City.—J. T. Fallon is at 80 Washington Square, East, New York City.—J. E. Garratt is with the city engineer of the City of Waltham, Mass., 6 Lexington Street.—G. S. Gould, 543 Pine Street, Manchester, N.H.—Ralph Hudson's mail should be addressed to him at the Institute.—Bob Keyes is with the B. F. Sturtevant Company, at Cleveland, Ohio, 423 Schofield Building.

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—John Kimball is now in Easton, Mass.—Dan Loomis, 727 State Street, Springfield, Mass.—H. J. C. MacDonald, Goose Bay, B.C., via Prince Rupert.—Macomber should be addressed at the Technology Club, 83 Newbury Street, Boston, Mass.—J. T. Mahar is at 92 State Street, Boston, Mass.—P. R. Nichols, Prospect Street, Reading, Mass.—G. R. Norton, First Lieutenant Coast Artillery Corps, Fort Andrews, Mass.—The men of Course II. will remember Arthur Pratt, a Princeton man. We all congratulate him upon his engagement to Miss Dorothea Curtiss at West Hampton Beach, Long Island, N.Y., last October.—"Kelly" Richards is living at 22 Regent Street, West Newton, Mass.—V. S. Rood, we understand, is with the Utah Apex Copper Company, Bingham Cañon, Utah.—Winsor Soule is at 1571 Beacon Street, Brookline, Mass.—Ed Squire has left Tech, and is in the automobile business in Boston, address, 57 Oakwood Avenue, Newtonville, Mass.—R. P. Stevenson is at 45 Princeton Street, Lowell, Mass.—The secretary had a pleasant surprise in December in meeting at his place of business, the Revere Rubber Company, Chelsea, Mass., Sheldon P. Thacher, who was with us for two and one-half years. Thacher is head chemist and superintendent of tests for the Peerless Rubber Manufacturing Company, New Durham, N.J. He says he has a good job, and enjoys life generally.—Our old joker, Johnnie Thomas, officially known as Lieut. John Joseph Thomas, Coast Artillery Corps, U.S.A., was married on December 28 to Miss Lillian Elizabeth Koch, at Fort Monroe, Va. Lieutenant and Mrs. Thomas will be at home after January 3 at Fort Adams, Newport, R.I. Hearty congratulations to John.—Sidney Wells is at 17 Fairview Street, Roslindale, Mass.—Bob Thayer goes to New York January 1 to be on the editorial staff of the *Railway Age Gazette*. His specialty will be locomotives.

1908.

JOHN T. TOBIN, *Sec.*, care of F. F. Harrington, Bridge Engineer, Virginian Railway Company, Norfolk, Va.

RUDOLPH B. WEILER, *Res. Sec.*, 26 Brooks Street, Brighton, Mass.

I. *On the Part of the Resident Secretary*

The November bi-monthly dinner of the class was held at the Technology Club on the 8th, at 7 p. m. Twenty-one members were present, as follows: "Pop" Gerrish, who presided, L. H. Allen, W. E. Booth, B. W. Cary, C. W. Clark, Langdon Coffin, A. M. Cook, C. F. Joy, Jr., Hardy Cross, L. B. Ellis, F. L. Franks, W. F. Grimes, A. W. Heath, O. S. Lyon, S. C. Lyon, R. I. Ripley. Miles Sampson, E. J. Scott, E. R. Smith, F. T. Towle, C. W. Whitmore. F. L. Franks had just returned from the Philippines

where he had been on the Coast Survey. It was decided to try the experiment of having weekly dinners, held for the present on Wednesday at 1 p. m., at Crosby's on School Street. After the dinner most of the fellows attended a lecture on the "Panama Canal" by L. K. Rouke, '95, formerly assistant division engineer on the Canal, and now superintendent of streets for the city of Boston, which was being held at the Club that evening. The next dinner will take place January 10, 1911, same time and place.—Mr. and Mrs. George H. Pierce announce the birth of a son, Stanley Holt, on November 25. George is with the Metropolitan Elevated Railway Company, 139 Adams Street, Chicago, Ill.—The resident secretary will be pleased to receive addresses of the following, letters addressed to them having been returned: —M. L. Bodenstein, George R. Cooke, Miss Susie T. Folsom, John M. Hatton, Roy Hunter, John E. Johnson, Tsau Chi Lee, A. F. Mohan, U. J. Nicholas, Walter L. Pratt, Henry J. Ruggles.

II. *Matrimonial*

Harold Edwin True was married at Newburyport, Mass., Tuesday, November 15, to Miss Marion Pierce Safford of Newburyport.—The engagement is announced of Ralph J. Batchelder to Miss Laura B. Houtman.—William F. Dolke, Jr., was married on Monday, November 21, to Miss Gertrude Reynolds at Spokane, Wash. At home after January 1, South 1617 Grand Street, Spokane.

III. *New Addresses*

Alfred B. Babcock, 30 South Fourth Street, Brooklyn, N.Y.—A. T. Balkam, 78 Hutchings Street, Roxbury, Mass.—Paul B. Barrett, United Shoe Machinery Company, Montreal, P.Q., Canada.—Ralph J. Batchelder, 12 Humboldt Street, North Cambridge, Mass.—W. E. Booth, Foxboro, Mass.—John C. Brooks, Technology Chambers, Boston, Mass.—Clifford N. Cochrane, 134 Howard Street, Melrose, Mass.—Herbert A. Cole, Jr., New England Telegraph & Telephone Company, Fitchburg. Mass.—Alton M. Cook, 242 West Newton Street, Boston, Mass.—R. E. Drake, 24 Trinity Place, Boston, Mass.—N. LeRoy Hammond, Bristol, Conn.—Jacob A. Fottler, 62 Alden Street, Montello, Mass.—C. E. Hollender, care of North Texas Traction Company, Fort Worth, Texas.—G. T. Gambrill, P. O. Box 314, Ensley, Ala. —Warner H. Kiefaber, Central Supply Company, Indianapolis, Ind.—Prof. H. F. Kuehne, University of Texas, Austin, Texas. —Howard B. Luther, Sedanstrasse 411, Dresden, Germany.—D. B. Myers, 321 Story Building, Los Angeles, Cal.—W. H. Medlicott, 84 William Street, New York, N.Y.—Edward A. Plumer, American Telephone & Telegraph Company, 15 Dey Street, New York, N.Y.—Prof. A. N. Rebori, Art Institute,

Chicago, Ill.—Walter D. Reed, 512 Oakland Bank of Savings Building, Oakland, Cal.—Robert Robertson, Jr., South Hamilton, Mass.—Edward J. Scott, 580 Commonwealth Avenue, Boston, Mass.—Joseph H. Sinclair, 72 Lorimer Street, Rochester, N.Y.—Riggin Buckler, 11 Pleasant Street, Baltimore, Md.—Clarence W. Clark, 23 West First Street, South Boston, Mass.—W. I. Griffin, 13 West Street, Utica, N.Y.—Arthur C. Merrill, 109 Main Street, Peabody, Mass.—J. R. Nichols, 4 Highland Avenue, Haverhill, Mass.

1909.

CARL W. GRAM, *Sec.*, 1609 St. Louis Avenue, East St. Louis,, Ill.

MAURICE R. SCHARFF, *Res. Sec.*, Mass. Inst. of Tech., Boston, Mass.

I

The resident secretary is arranging for a dinner to come off in January. Individual notices containing full particulars as to time, place, price, etc., will be sent to every member of the class, along with a request for annual dues, and for the latest information as to addresses, etc. Please prepare to be prompt in replying, not only to the questions, but also to the request for dues.—The men living near Boston are also requested to note the movement recently inaugurated by the younger class secretaries, to gather the local graduates of the classes between 1900 and 1910 for an occasional luncheon or smoker. Notices will be sent out as soon as plans mature, and it is hoped you will take advantage of this opportunity to renew acquaintance occasionally. Remember that you have to lunch somewhere, and whenever these gatherings come you will enjoy your lunch more if you join in.

II

Cupid continues his attacks on our ranks, as is shown by occasional rumors from the front. Paul Lord and Mex Weill are the latest freshmen in the matrimonial training school. Particulars below:—

From Boston *Journal*, November 17:

The marriage of Miss Emily Clark, daughter of Albert Earl Clark, and Paul Burton Lord, a graduate of Tech in the class of 1909, took place last night at the home of the bride, 20 Oakview Terrace, Jamaica Plain, the ceremony being performed by the Rev. Carol Perry of St. Peter's Episcopal Church. Four-year-old Shirley Blanchard, cousin of the bridegroom, was the flower girl, and the bride's sister, Miss Gladys Clark, the maid of honor. Henry F. Miller, 2d, M. I. T., acted as best man. Mr. and Mrs. Lord will make their home in Velardena, Mexico, after a short wedding trip.

Mr. Lord is a son of Mr. and Mrs. James Lord of 18 South Munroe Terrace, Pope's Hill, Dorchester, and a mining engineer.

From San Francisco *Call*, November 25:

The wedding of Miss Helen Loeb and Melville Weill Wednesday evening at the home of Mr. and Mrs. A. Weill in Clay Street was one of the prettiest affairs of the winter. The bride is a daughter of Mr. and Mrs. Jacob Loeb of the City of Mexico and her parents are among the most prominent residents of that city. She was educated in Europe and had the advantage of travel abroad. She was a visitor in this city last season, and was extensively entertained. Weill has many friends in this city but in recent years has been identified with mining affairs in the City of Mexico. He is a graduate of the Massachusetts Institute of Technology and is a son of A. Weill, president of the American Club in Mexico City. The bride is a cousin of Oscar S. Straus, ambassador to Turkey. The couple departed on a brief wedding journey and will return for a few days' visit here before going to their new home in Mexico.

And there are more coming. We don't hear of all of them, but the following rumor has reached us:—

From *Town Topics*, New York, November 3:

Mr. and Mrs. John W. Maillard have announced the engagement of their daughter, Anita Maillard, to Temple Bridgman, who is a mining engineer of promise, a graduate of Yale and of the Massachusetts Institute of Technology. It was during a trip in South America last year that she met Bridgman, who has been a recent guest at the Maillard home *en route* to Manila, where his profession has called him.

III

Probably no 1909 man has been so much in the public eye as Sam Perkins (V). He is a high-flyer of the first order, and all of his classmates will be interested in the reports below:—

From Boston *Globe*, October 22:

Samuel F. Perkins, aid in the German balloon Dusseldorf II. one of three missing starters in the international race, is a Dorchester man, who has had a long and varied experience in aëronautics. While a comparatively young man, he has long ranked as one of the foremost experts in aëronautics in America.

When a boy, attending the elementary schools, Mr. Perkins was a diligent student of kite-flying, and he is today perhaps better known as a manipulator of kites of all descriptions than as a balloonist.

After graduating from Mechanic Arts high school, he associated himself with Prof. A. Lawrence Rotch of Harvard, and H. H. Clayton at the Blue Hills Meteorological Observatory, and it was there that he gained his first important experience with kites. He later spent two years at the Massachusetts Institute of Technology, and he was an assistant to Capt. Thomas S. Baldwin in Washington when the latter sold the United States government its first dirigible balloon.

He is a member of the Aëro Club of America and the Aëro Club of New England and had charge of the kite-flying at the recent Harvard aëro meet at Atlantic, when he sent aloft several man-carrying kites, measuring eighteen feet in diameter.

Mr. Perkins' knowledge of the upper air currents has long been recognized and this secured for him the opportunity to become aid to Lieut. Hans Gericke, pilot of the Dusseldorf II.

Mr. Perkins had just returned from a kite-flying exhibit in the City of Mexico when the offer to accompany Pilot Gericke was received. Although having only forty-eight hours' notice, he eagerly accepted the invitation.

From Boston *Herald*, November 11:

Philadelphia, November 10.—Samuel F. Perkins of Boston made a record kite ascension within the city limits here today, being drawn more than forty feet into

the air by twelve kites. Perkins was swung over North Broad Street and across the tops of several buildings.

A permit had to be secured from the city authorities for the exhibition and Mr. Perkins secured the first permit ever issued by any city to fly man-carrying kites in the streets and over a city.

—Jack Elbert (X.) has been heard from. He writes from the University of Charlottenburg, at Berlin, "I have now started in with my university work here, and find what little I can understand very interesting. However, things are beginning to look a little brighter, and I have hopes."—Miss Longyear (IV.) wrote from Florence, Italy, in October, that she expects to be back in this country by Christmas, and adds the following notes: "I saw Fritz Kellogg, Simmons, and Louis Pitkin in Paris—all wedged in behind a table at the Café des Deux Magots. Paris certainly agrees with Fritz; he has the most becoming mustache, and is working as hard as—usual."—A. B. Morrill (XI.) is at the Sewage Experiment Station of the Sanitary District of Chicago, and sends in the following: "We are still in the sewage disposal investigation business and starting on another cold winter. I have been chief and entire force on some little sideline screening experiments the last few weeks. Now we are working on a report of progress, and I have been gathering rates and results of analyses and passing them on to the girl with the adding machine. Salmonde is with us shaking out suspended matter, dissolved oxygen, and oxygen consumed at a merry clip. And George F. Maglott, 1910, is protecting the plant from the winter's cold, its own infirmities, and the occasional solid-ivoryness of the filter attendants."—Stephenson (X.) is extending his sphere of usefulness at Rose Polytechnic Institute, and writes that he is now teaching organic chemistry, qualitative analysis, and gas analysis.

IV. *Changes of Addresses*

D. K. Bullens, Parish Manufacturing Co., Reading, Pa.—Charles L. Campbell, 228 Beale Street, Wollaston, Mass.—Kenneth E. Carpenter, 25 St. James Avenue, Boston, Mass.—Howard Congdon, care of Balcom & Darrow, 314 Madison Avenue, New York City.—Bradley Dewey, care of American Sheet & Tin Plate Company, Frick Building, Pittsburg, Pa.—J. J. Elbert, Kaiserdamm 113, Charlottenburg, Berlin, Germany.—George H. Gray, care of Telluride Power Co., Olmstead Provo, Utah.—Fred M. Green, care of The Adjutant-General, War Department, Washington, D.C.—Benjamin Hammond, 35 Court Street, Boston, Mass.—Calvin N. Harrub, Westfield, Mass.—Herbert L. Jenness, care of Boston & Northern Street Railway Company, 84 State Street, Boston, Mass.—Reginald L. Jones, 25 St. James Avenue, Boston, Mass.—Robert C. Kerr, 5215 Winthrop Avenue, Chicago, Ill.—Lester H. King, 13 Arnoldale Road,

Hartford, Conn.—Robert C. Latimer, 83 Newbury Street, Boston, Mass.—P. H. Mayer, 13 Central Park, West, New York City.—A. B. Morrill, 3932 Lake Avenue, Chicago, Ill.—Morse W. Rew, 849 Blue Hill Avenue, Boston, Mass.—Edward L. Ryerson, Jr., 38 Banks Street, Chicago, Ill.—Harold O. Stewart, Engineering Department, Rochester Railway and Lighting Company, Rochester, N.Y.—George E. Washburn, 36 Forest Street, Lexington, Mass.—John A. Willard, 1106 Hamilton Avenue, Trenton, N.J.—E. T. Williams, Imperial Maritime Custom, Nanking, China.—Claude T. Wilson, 134 Montague Street, Brooklyn, N.Y.—Philip E. Young, Mapleview Terrace, New Bedford, Mass.—Miss Helen M. Longyear, care of Richmond Hill House, New York City.—A. K. Mitchell, Ashcroft, British Columbia.—C. A. Johnson, 510 W. 184th Street, New York City.

1910.

JOHN M. FITZWATER, *Sec.*, 119 Henry Street, Brooklyn, N.Y.

G. BERGEN REYNOLDS, *Res. Sec.*, Southbridge, Mass.

Course I.—Harry O. Penland, S., 164 Howard Street, Spokane, Wash., is with his father John S. Penland, Union City, Ind.—M. E. Harris, 62 Lincoln Street, Lowell, Mass., is a law student at Boston University.—M. Alva Zook, 544 West Chestnut Street, Lancaster, Penn.—J. Evans James, Elverson, Chester County, Pa., is a draughtsman at the Baldwin Locomotive Works.—Elmer Jacobs, Mt. Carmel, Ill., care of Big Four Railroad, is with the C. C. C. and St. L. Ry.—Philip G. Laurson, 407 West Second Street, Elmira, N.Y., is with the American Bridge Company of New York.—Holman I. Pearl, 362 Longwood Avenue, Boston, Mass., is back at the Institute to complete his studies.—Malcolm B. Hall, Foxboro, Mass., is with the Standard Gauge Manufacturing Company.—Otto R. Rietschlin, call box 41, Massena, N.Y., is with the T. A. Gillespie Company of New York and Pittsburg. Rietschlin is working on the Souday dam and power house at Massena, N.Y., being built for the St. Lawrence Power Company.—Harold F. Parsons, 79 Mt. Pleasant Avenue, Gloucester, Mass., is with Barrows & Breed, 6 Beacon Street, Boston, Mass.—Thomas C. Quirk, 27 Quirk Street, Watertown, Mass., is treasurer of the firm Thomas Quirk & Son, contractors.—Austin B. Mason, Sumas, Wash., care of Stone & Webster, is working on the White River power development under the Pacific Coast Power Company.—Richard G. Tyler, 1510 West Avenue, Austin, Texas, is in the city engineering department. Tyler was married to Adelaide M. Tedford of Brookline, Mass., June 5, 1910.—Robert B. Alling, Riverside, Ill., is with the Shoshone Irrigation Survey, Wind River, Wyo.—H. D. G. Baxter, Timber, Ore., is with the P. R. & N. Co.—Rafael J. Torralbas, 640 J del

Monte, Havana, Cuba, is inspector of the sewerage system and paving contract of the city of Havana.—Kenneth Leavens, Box 307, Needles, Cal., is with the Atchison, Topeka & Santa Fé Railway Company. Leavens is transit man in charge of a maintenance party on the Arizona division, having 350 miles of main line to survey from Seligman, Ariz., to Bakersfield, Cal., and all of it desert.—S. Paul Vecker, 118 University Station, Yale University, New Haven, is a student at Sheffield Scientific School, class 1910. —Guy N. Harcourt, 60 Batavia Street, Boston, Mass., is at the Institute taking advanced work.—Paul R. Fleming, Natick, Mass., is with W. W. Wight, C. E., Wellesley Hills, Mass.—Guy H. Little, 52 The Albiston, Utica, N.Y., is with the Gunn Motor Company, Utica, N.Y.—Augustus B. Merry, Corzal, Canal Zone, Panama, is working at Pedro, Miguel, on the canal lock.—James G. Tripp, 221 Byrne Building, Los Angeles, Cal., is with the California Builders' Supply Company.—R. I. Ripley, 112 Cedar Street, Malden, Mass., is with the W. H. McElwain Company.—Otis S. Smith, Laconia, N.H., is with the town engineer of Westfield, Mass.—Harold Sharp, Georgetown, Cal., is with the Stone & Webster Engineering Corporation.—William E. Haugaard, Chestnut Street, Richmond Hill, N.Y., is studying abroad.—M. C. Halsey, Monrovia, Cal., is with Richard Neustadt Construction Company, Los Angeles, Cal.

Course II.—George H. Magee, 698 Salem Street, South Groveland, Mass., is with the Western Electric Company, Hawthorne, Ill. Magee is a student in the course of telephone emergency.—Atwood C. Page, Hartford, Conn., care of Security Company, has not entirely recovered his health, and is going South for the winter.—Jacob W. Purrinton, 430 Butler Exchange, Providence, R. I., is with C. R. Makepiece & Co., Mill, England.—C. F. Doble, 16 Maple Street, Hudson Falls, N.Y., is with the Union Bag and Paper Company.—Harold C. Brown, 104 Geneva Avenue, Dorchester, Mass., is at the Institute to complete his studies.—William H. Wengert, 200 Columbus Avenue, Boston, Mass., is taking Mr. Hiller's position as assistant in the Machine Design and Mill Engineering Department.—R. F. Hill, 56 Columbia Avenue, Westmount, P.Q., is with the Wire & Cable Company, Montreal.—H. G. Hawes, Jr., 60 Anderson Place, Buffalo, N.Y., is with C. R. Thomas Motor Company of that city.—O. C. F. Meisel, 10 Upland Avenue, Dorchester, Mass., is at the Institute to complete his studies.—Howard B. Richardson, 132 Tenth Street, Northeast, Washington, D.C., is in the Agricultural Department in the Bureau of Plant Industry.—Walter T. Spalding, 215 West Twenty-third Street, New York City, is terminal engineer of the Delaware, Lackawanna & Western Railroad.—H. S. Waite, 29 Commonwealth Avenue, Boston, Mass., is at the Institute to complete his studies.—Alfred Hague, 52 East Sixty-sixth Street, New York City.—James A. Cox, 32 Hemlock Street,

Roslindale, Mass., is with J. S. Cushing Company as secretary to the president.—W. H. Duffield, Hamilton, Ontario, care of John McPherson Company.—Tyler W. Carlisle, 336 Frankfort Avenue, Cleveland, Ohio, is with Strong, Carlisle & Hammond Co.

Course III.—Robert E. Anderson, 307 Broadway, Cincinnati, Ohio.—H. N. Crichton, Robinson, Col., is with the Wilson Mining Company.—Frederick A. Hurley, Stag Hall, Sparrows Point, Md., is with the Maryland Steel Company.—W. Burton Hargraves, 7 Eliot Place, Jamaica Plain, is private assistant to Professor Richards.—John M. Longyear, 253 College Avenue, Haughton, Mich., is a student at the Michigan College of Mines.—Chester J. Briggs, Santa Barbara, Chihuahua, Mexico, is with Minas Tecoletes y Anexas.—George M. Roads, Jr., Pottsville, Pa., is with the Philadelphia & Reading Coal and Iron Co.—Robert S. Breyer, Box 65, Y. M. C. A., Denver, Col., is with the American Smelting & Refining Co.—Lee Kalback, Oskaloosa, Iowa, is with the Kalback Lumber Company.—Robert F. Burnett, Myers Mine, Chisholm, Minn., is with the Oliver Iron Mining Company.—Benzo Katsura, Mineral and Metallurgical Department, Tokio, Imperial University, is at the Institute taking advanced work.

Course IV.—Charles C. Benton, Wilson, N.C.—James B. Noble, 3359 Wabash Avenue, Chicago, Ill., is with W. B. Hough Company.—Harry Trevithick, Refuge Cotton Oil Company, Vicksburg, Miss.—Harold E. Akerly, 13 Amherst Street, Rochester, N.Y., is with Westinghouse, Church, Kerr & Co.—Lewis J. Holliday, Laramie, Wyo., is with W. H. Holliday Company.—J. Theodore Whitney, 497 Main Street, Wakefield, Mass., is with Whidden & Co., general contractors and builders.—Kenneth E. Carpenter, 66 Westland Avenue, Boston, Mass.—Benjamin S. Hirschfeld, 1328 Hyde Street, San Francisco, Cal., is with Dakewell & Brown, architects.—Flora A. Johnson, Comstock, N.Y.—Philip A. Devlin, Turpentine Jasper Company, Texas, is with the Western Naval Stores Company.—Donald A. French, 172 Fairmount Avenue, Hyde Park, Mass., is with Joseph C. Schaeffler & Co., Boston.

Course V.—E. K. Jenckes, 624 Oak Street, Irwin, Pa., is with the Westmoreland Coal Company.—Harrison L. Clough, Merrimack, N.H., is with H. McElwain Company.—O. D. Evans, 55 Brooksdale Road, Brighton, Mass., is at the Institute taking graduate work.—Samuel Kostiuk, 34 Causeway Street, Boston, Mass.

Course VI.—Arthur L. Stein, 307 Madison Avenue, Scranton, Pa., is in the electrical department of the Lackawanna & Western Railroad Co.—Edward L. Howe, 613 Coal Street, Wilkinsburg, Pa., is in the apprentice course of the Westinghouse Electric & Manufacturing Co.—R. W. Brush, 3 Durham Street, Boston, Mass., is with the Holtzer-Cabot Electric Company.—Charles M. Smith, Y. M. C. A. Building, Pittsfield, Mass., is with the General

Electric Company.—F. T. Crossley, 121 Beacon Street, Hyde Park, Mass., is with Stone & Webster.—Philip M. Wentworth, 1115 Mill Street, Reno, Nev., is with Stone & Webster.—William T. Biedler, 2802 North Calvert Street, Baltimore, Md., is with the Consolidated Gas, Electric Light & Power Co.—Ralph W. Perkins, Wenham, Mass., is with Ransome & Smith, concrete construction.—Frank A. Hayes, 272 Lafayette Avenue, Passaic, N.J., is with the Robins Conveying-Belt Company.—Allen A. Gould, Merrimack, N.H., is with W. H. McElwain Company.—George S. Humphreys, Provo, Utah, is with Telluride Power Company.—Horace V. S. Taylor, 613 Coal Street, Wilkinsburg, Pa., is an apprentice with the Westinghouse Electric & Manufacturing Co.—Elbert D. Green, Montreal, Canada, care of Allis-Chalmers-Bullock, Ltd.—William Horton, Jr., Provo, Utah, is with the Telluride Power Company.—Ralph H. Bowers, 832 Columbia Road, Dorchester, Mass.—Arthur L. Harding, Telluride Power Company, Telluride, Col., is with the Telluride Power Company.

Course VII.—Herbert O. Jenkins, 176 Cowper Street, Palo Alto, Cal.—William F. Wells, University of North Dakota, is in the Public Health Laboratory.—C. K. Blanchard, 554 Washington Street, Wellesley, Mass., is with the Wellesley Board of Health.—Karl J. Pomeroy, 97 Green Street, Melrose, Mass., is at the Institute.—Ruth O. Pierson, State House, Providence, R.I., is in the State Board of Health Department.—Horace S. Griswold, Department of Civil Engineering, University of California, Berkeley, Cal., is an instructor in civil engineering.—T. M. Hilliard, New York City College, New York, N.Y., is an assistant instructor.

Course IX.—K. D. Stellwagen, 265 Putman Street, Detroit, Mich.—Douglas C. McMurtrie, 480 Park Avenue, New York, is in the advertising and publishing business for himself.

Course X.—W. N. Drew, 201 Magnolia Street, Boston, Mass., is at the Institute to complete his studies.—James H. O'Brien, Fort Street, Detroit, Mich., is with W. C. Garregues, chemical engineers.—Karl W. Gasche, 112 Lafayette Avenue, Brooklyn, N.Y., is with the American Sugar Refining Company.—Charles E. Meulendyke, 404 Y. M. C. A., Kansas City, Mo., is with the United Zinc & Chemical Co.—Chester J. Randall, 248 Ash Street, Waltham, Mass., is back at the Institute as an assistant to Prof. A. H. Gill.—T. B. Whittemore, 583 Riverside Drive, New York, is with George A. Fuller Company, New York.

Course XI.—P. K. Brown, 44 Fenway, Boston, Mass., is at the Institute to complete his studies.—Henry J. Perry, 222 Morrison Avenue, West Somerville, Mass., is with Lawrence & Co., Boston, Mass.—Richard C. Jacobs, Jr., 215 Auburndale Avenue, Auburndale, Mass.—Ralph Kilscher, 269 St. Botolph Street, Boston, Mass., is with the Massachusetts State Board of Health.

Course XIII.—Leslie E. Geary, 1960 West Ninth Avenue, Seattle, Wash., is in business for himself.—Earl J. W. Ragsdale, Coast Artillery Corps, Fort Munroe, Va., is second lieutenant of the coast artillery.—John F. Malon, Jr., 169 College Street, Buffalo, N.Y., is with the Empire Shipbuilding Company.—French P. Sargeant, South Bethlelem, Pa., is with the Bethlehem Steel Company.

Course XIV.—Robert H. Lombard, Ashburnham, Mass.—The following notice taken from the Boston *Transcript* will be of interest to the class: The marriage of Miss Helen Hood Perley and C. Edward Tilton of Sutton, N.H., which took place at the home of the bride's parents, Mr. and Mrs. E. Horace Perley, Lakeside, Wakefield, was performed by Rev. Rufus S. Chase, rector of the Emmanuel Church in Wakefield. Miss Ruth Tilton, a sister of the bridegroom, was maid of honor and the bride's brother, Robert Perley, served as best man.

The Technology Review

VOL. XIII FEBRUARY, 1911 No. 2

HEARING BEFORE JOINT COMMITTEE ON EDUCATION

Legislative Committee hears arguments in favor of grant of $100,000 a year from the State—An unusually interesting hearing

The first important event in the campaign for a grant of $100,000 a year from the state was the hearing before the joint Committee on Education of the Massachusetts Legislature, which was held at the State House, February 7th. Although this hearing occurred on the day of the heavy snow storm the largest room available was filled, mostly with Tech men. The hearing was unusually interesting. It was full of variety and arguments were presented from every standpoint. The principal address was made by President Maclaurin, who was followed by President A. Lawrence Lowell of Harvard University, a member of the Technology Corporation; Mayor John F. Fitzgerald, William H. O'Brien, president of the Central Labor Union; Frederick P. Fish and President Frederick W. Hamilton of Tufts College, two members of the State Board of Education; Walter C. Fish, manager of the General Electric Works; Commissioner of Public Works Louis K. Rourke of Boston, formerly engineer of the Panama Canal; Harvey S. Chase, an expert accountant; Whitfield Tuck of Winchester. President Hamilton was the only one in opposition to the bill, and even he urged his point largely in order to have full consideration of all such grants on a broader basis.

Dr. Maclaurin presented an able plea much of which is covered by the argument prepared by him and printed in the January REVIEW In speaking of the increased expenses he referred to the pressure of competition from western institutions richly endowed by state grant.

"In the early days the Institute was almost alone in its chosen field. Now most of the great State universities have vigorous departments of technical education; and the millions that are poured in annually to some of these universities inevitably increase the price that must be paid for professors of the front rank. When you appreciate these facts you will not be surprised by an increase of nearly $73,000 per annum in our salary list; and if you investigate the facts, you will be convinced that we cannot possibly be charged with extravagance. The Carnegie Foundation has recently issued a bulletin setting forth the cost of the training in a single department in a number of the leading educational institutions of

America. An examination of that report will show that Technology is managed most economically. As an indication of the relative expenditure, take these three figures from the bulletin: Columbia, 75; Princeton, 68; Technology, 46.

"I hope you will understand that when we get this $100,000 per annum we will not be in clover. We will have just enough to keep things at their present level, and with the inevitable rise in cost, we shall have to press immediately for support from other quarters than the State.

"Our buildings are now not only scattered, but they are absolutely crowded out. To meet the changed conditions and to maintain the highest standards of efficiency we simply must move. This will involve buying a new site and rebuilding on a larger scale at the cost of millions. Now not only do we expect but we are absolutely assured of generous support from our alumni in carrying out this policy of expansion. However, although there is scarcely any limit to their generosity, there is a limit to their means."

Senator Brown: You say that you are now spending some $30,000 out of your reserve fund. I presume that you could not keep that up indefinitely.

President Maclaurin: We would have to drop some of our departments or reduce the salaries of our teachers and instructors.

Representative Bellamy: Would you be willing to allow the State Board of Education to have more to say about the conduct of the institution if this grant was allowed?

President Maclaurin: I should not object to the State Board being authorized to visit the Institute and report on its workings. There should be some measure of State control wherever public money is expended.

During the questioning Dr. Maclaurin said that while the question of a new site had not been fully decided it is hoped that it soon will be decided. While discussing the State grants and State scholarships, Dr. Maclaurin said that the Institute gives away every year in scholarships, more than the equivalent the State's $25,000.

Frederick P. Fish, member of the Executive Committee, said that he had served on that committee for several years and that every year his respect for the Institute has increased. Mr. Fish reviewed in brief outline the history of educational institutions receiving aid from the states. He showed that the colleges of the West, in order to catch up with the older institutions of the Atlantic seaboard, had been aided most liberally. Technology started practically a new departure in education —technical education—about fifty years ago and, said Mr. Fish, "the success which it has attained in so short a time is remarkable.

"I should like to prophesy," said Mr. Fish, "that we are now only at the beginning of this great industrial development and that never will the need for schools such as the Massachusetts Institute of Technology be so great as in the coming years. Chemistry will develop even more wonderfully than has electricity in recent years."

Mr. Fish said that he had been impressed greatly by the economies which Tech has to practise; that these economies are cropping out constantly in every department and often serve to handicap the best men.

Representative Bellamy—As a member of the Massachusetts State Board of Education, do you come here, Mr. Fish, to advocate granting Tech $100,000 when it may serve to cripple other State institutions?

Mr. Fish—I am under some embarrassment in appearing here as a member of the State Board and as a member of the M. I. T. Corporation, but I feel that the $100,000 cannot be spent to better advantage than in helping M. I. T. Of course we cannot spend the $100,000 twice, and we have to consider whether we can spend it to better advantage than by giving it to Tech.

Senator Brown—As a member of the State Board of Education you favor increasing this grant?

Mr. Fish—Yes; I cannot separate my belief as a private citizen from my belief as a member of the State Board.

One of the proposed arrangements for New Technology Buildings

President Lowell of Harvard, who is a member of the Technology Corporation, said that in general he was not in favor of institutions not directly controlled by the State being given State aid. But in the case of M. I. T. he felt that it practically was a State institution to some extent. In a way the State is bound to see that Tech is helped until it gets on its feet, so to speak. Tech has grown faster than anyone could have foreseen. Dr. Lowell said that the time soon should come when Tech should get along without State aid. That the institution is efficient there can be no doubt; that there is need for such an institution there can be no doubt. It not only is educating its students, but it is doing much for the community.

"The only question here," said Dr. Lowell, "is whether you deem the Institute a sufficiently worthy institution to depart from the established custom of not aiding schools and colleges for the higher education."

Representative Armstrong—What do you propose to do with your present property?

Dr. Lowell—We propose to sell that property but on a part of it there are restrictions.

Mayor Fitzgerald said that Boston would have to pay 35 per cent of this proposed grant. He had considered it carefully and supported it unreservedly. The State pays one half the expense of industrial schools established by the cities and, while these schools fit for business rather than for Tech, yet they really establish a precedent for this increased grant.

Technology, said the mayor, is a great benefit to Boston. After speaking of Commissioner of Public Works Rourke and saying that he was working on his first big snowstorm, the mayor said that the method of handling this problem was one of the many things which showed the value of having a scientific man like Mr. Rourke, a Tech graduate, in city service. There is a vast field here for scientific men to save money for every municipality.

Frederick P. Stearns, former chief engineer of the Metropolitan Water Works and also of the State Board of Health, emphasized the growing importance of engineering. The growth in the numbers of engineers has been 150 per cent within the past decade.

Mr. Rourke said that he came as a product of the Institute. "I came when the tuition was $200 and I had to hustle for it," said he. "I hustled and it did me good."

"If the grant can be given to the Institute," said Superintendent Rourke, "it will come back to the State a hundred fold. Massachusetts can not let the Institute go backwards."

Whitefield Tuck of Winchester said that for once he was present not to oppose but to favor "a cause so great and good." Later in his address Mr. Tuck showed that his change of feeling was only temporary by saying that he expected "to oppose about everything else that is to come up and would add to the State's expenditures." This remark met with laughter.

Harvey S. Chase, the expert accountant, gave figures to show how badly off the institution would be without State aid.

Walter C. Fish, manager of the General Electric Works at Lynn, which employs about 11,000 men, said that that business, a strictly technical one, had grown up through the development of technical training. No one, he said, could point to any manufacturing business which would not fail within a few years if it had no benefits from technical training. The graduates of Tech have played an important part in Massachusetts. A perusal of the catalogue will show this conclusively.

William H. O'Brien, president of the Boston Central Labor Union, had just arisen to speak when Senator Brown asked: "Do you appear today as Mr. Hostile O'Brien or Mr. Harmony O'Brien?"

After laughter had subsided, Mr. O'Brien said: "I appear now as 'Mr. Harmony O'Brien,' but I wish always to be understood as opposing unwarranted expenditure of State money. In this instance, however, I am for this grant and I believe that in this attitude I am supported by the laboring people and others.

President Frederick W. Hamilton of Tufts College was the only one who stood up when those opposed to the bill were called and after nearly everyone else present had arisen to show their favor. He said that he did not desire to oppose what had been so well said by previous speakers, but desired that the committee should consider that there are other colleges and schools; that while Tech is a fine technical school, it is not the only one in the State. The time has come when a policy for the State's relations with colleges and the higher schools should be considered. That question—much broader than that a of grant for Tech—is embodied in a resolve now pending. He favored subsidizing the student rather than the college, and said that he could not see how the plan for Tech would aid the students.

If the bill is reported favorably by the Committee on Education it is likely that there will be a joint hearing before the Committee on Ways and Means—we hope before the month is over. It is impossible to say when the Legislature will vote on the matter but from the universally appreciative attitude of the members of that body we have a strong hope that the vote will be taken before April 1 and that it will be favorable.

The Offer of the Springfield Alumni

With the exception of the campaign for state aid the most interesting development of the year was the offer of the alumni of Springfield and vicinity of a site for the Institute of Technology When it became rumored that the Institute might be obliged to move from greater Boston the alumni of the Connecticut Valley, after putting in about a week of solid work secured options on thirty acres of land very close to the city of Springfield. A delegation was sent to Boston to offer this land to President Maclaurin with the assurance that if he would give Springfield consideration a very large sum of money would be raised there for the purpose of securing the Institute. The committee stated that the Chamber of Commerce and the Board of Trade, as well as other civic, business and social interests of the city, would start a campaign at once if there was a possibility of accomplishing the desired result. Dr. Maclaurin assured the delegation that the matter would receive serious consideration by the Executive Committee of the Corporation.

Although the Springfield men realized that it would be a very difficult thing to

get the Institute to move away from Boston, and although Technology is first, last and all the time with the Connecticut Valley alumni, wherever it may finally locate, they are fully persuaded that if the Institute should move to Springfield it would soon create an atmosphere of its own in the sympathetic surroundings of that city and it would further be the most important educational institution of its kind in western Massachusetts.

The REVIEW has received the following letter from the Springfield alumni committee having this matter in charge:—

SPRINGFIELD MASS., February 6, 1911.

EDITOR TECHNOLOGY REVIEW:—

Actuated by the same feeling which is in the heart and mind of nine thousand other Alumni of Tech scattered all over the earth, the feeling of loyalty to the Institute and a desire to see it able to establish such a policy as will allow it to multiply a hundredfold its sphere of usefulness and to develop an even stronger individuality than it has been able to do in the past—actuated by this feeling the Alumni Association of Connecticut Valley offers to the Institute a site in Springfield.

It is generally agreed that the present site in Boston is a handicap and we believe that with Boston's inevitable growth in the near future, this handicap will apply to a site in Greater Boston.

There are sites and sites.

Located in Springfield, the development of Greater Technology would be more efficient and more rapid than in any other part of the Commonwealth and its individuality and prestige would be tremendously enhanced. In Springfield, in twenty years, Technology would dominate the city and we would be proud of the fact. As to the Springfield site, the officials of the Institute who have inspected it have expressed themselves to the effect that it was ideal and was ample for many years to come.

In addition to this site, which the Technology Club of the Connecticut Valley will give to the Institute, the land immediately surrounding it is of such a nature and in such an undeveloped state that two hundred acres more could be easily obtained surrounding the tract which is offered. We believe this location would focus the attention of all its Alumni to a greater degree than a relocation in Greater Boston. For fifty years, Boston has derived enormous revenues from the students and faculty of the Institute of Technology.

What has it given in return?

There may be reasons why the Institute should remain in Boston. There are many more reasons why it should remove from Boston. The present valuation of real property is already so high within ten miles of the State House that a suitable site sufficiently large for future development would require an enormous expenditure which might better be used for greater equipment, more buildings or higher salaries.

Within a ten mile radius of the site offered is a population of 250,000 and the great majority of this population is engaged in industries which call for highest technical skill for their successful operation. Within five miles of the site is the largest development water power east of the Mississippi River save that at Niagara. Adjacent to and within a half mile of the site are sixteen manufacturing plants of international importance; within a two mile radius is greater diversity of manufacturing and industrial plants than can be found in any city of this country within this radius. Within the ten mile radius are six highly diversified manufacturing centers.

Loyalty to the Alma Mater is a distinctive characteristic of the Anglo Saxon and this loyalty is most pronounced where the individuality of the University dominates its surroundings. An institution such as Tech should be located in the heart of a region where industrial and scientific pursuits dominate rather than in a community given over to distinctly academic or agricultural interests and in a place where the least expenditure of money will give the most efficient education,—where the undergraduate may feel that he is getting this education at the lowest fixed cost; where the governing body may know that these conditions are fulfilled.

We most earnestly ask all Tech Alumni to consider this matter carefully. This offer is intended to give the Institute a chance to come into its own and is inspired only by loyalty to Technology. Whatever may be the final decision of the Corporation, and wherever they may decide to locate, the Alumni of the Connecticut Valley will do everything in their power to help carry out the Tech policy.

FRANK H. PAGE '85.
E. E. LOCHRIDGE '05.
G. C. GARDNER '87.

A Splendid Tribute to Newell

After Congress had authoirized the bond issue of $20,000,000 for the work of reclamation of arid lands in the West, President Taft appointed a board of army engineers to make an investigation into the Reclamation Service and advise him as to this expenditure. The *Outlook* says it is a splendid tribute to the unremitting and unselfish work of the director of the Reclamation Service, Mr. F. H. Newell, '85, that this board made no recommendations differing essentially from the plans and policy which he has pursued.

Duquesne Follower of Despradelle

It is of interest that Professor Duquesne, who is coming to Harvard University to give instruction in architectural design, should have received his training at the Beaux Arts in Paris in the same atelier as Professor Despradelle, who has done so much for the architectural education of this country during the seventeen years that he has been teaching at the Institute of Technology.

In 1897, Duquesne won the Grand Prix de Rome and while pursuing his studies at the Villa Medici was always noted for the splendid character of his work. He is the first man who won this coveted honor in competition on a plan that was unsymmetrical and free, and which disregarded the generally accepted traditions of the profession. Many of his studies made in the atelier have been considered so excellent that they have received the serious attention of his successors ten or fifteen years later. As a draughtsman he is unexcelled and his work has always been distinguished for its restrained character. Among some of his Boston pupils are Guy Lowell, Allen H. Cox, F. L. W. Richardson and Philip Wadsworth.

Duquesne as a younger student did much work under the guidance of Despradelle, who was his "ancien" in the atelier, and it is noteworthy that Harvard, in selecting the best teacher to be found in France, should have chosen a man who will continue the traditions in teaching, which, under Professor Despradelle at Tech, have long made Boston a most important center of architectural education in this country. —*Boston Herald.*

Professor Jackson retained by the British Government

Professor Jackson, head of the department of electrical engineering at the Institute, has been retained by the British government to advise the Postmaster General in regard to the value of the great telephone property which the government is to purchase this year from the operating companies and make a part of the national post office organization. Professor Jackson has been expert adviser of the Massachusetts Highway Commission in telephone matters and is president of the American Institute of Electrical Engineers. He went to England on a preliminary consultation, but returned to America on February 7th. This commission from the British government is a striking tribute to America, the Institute of Technology, and Professor Jackson. It has provoked some comment on the other side of the water, but the selection was made after the mature deliberation which the magnitude of the work in hand demanded. The report will involve over 1,500 exchanges and more than half a million subscribers. The capital of the companies is $60,000,000.

Research in Electrical Engineering

Various lines of research are being carried on in the department, mostly under the direction of Professors Pender and Wickenden. Some of these relate to the effects of heat treatment on the magnetic qualities of silicon iron, certain transient phenomena that may occur in long electric circuits, the effect of high frequencies on the permeability of iron, the effective resistance and reactance of steel rails when conveying alternating currents, the selective action of spark-gap lightning arresters with respect to frequency, the reflection of light from walls and ceilings, the disruptive strength of rubber-insulated coatings on wires, etc. Certain of these are continuations of work started last year, and researches in each will be carried on as may be convenient and needful to get knowledge of the phenomena under investigation.

Herbert W. Jaques, '77, was elected president of the Massachusetts Golf Association, January 20th.

CARNEGIE RECOGNIZES DR. HALE'S WORK

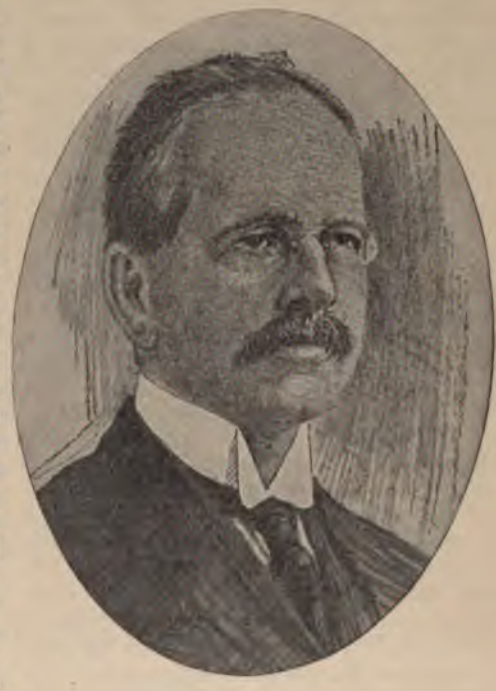
An additional grant of $10,000,000 for research largely inspired by the wonderful results of the Mt. Wilson Solar Observatory at Pasadena, California.

Announcement was made last month that Andrew Carnegie had given an additional $10,000,000 to the endowment fund of the Carnegie Institution for research in Washington. One of the principal fields of its research is astronomy, the work being directed by George E. Hale, '90, director of the Mount Wilson Solar Observatory, at Pasadena, Cal. In a newspaper interview, Mr. Carnegie said that he visited the observatory a year ago, and discovered a genius in Professor Hale, who adopted entirely new processes in astro-physics. One of his photographic plates taken just before Mr. Carnegie arrived, revealed 16,000 new stars, and another plate made since that time, brought to light 60,000 more, some of them ten times larger than our sun, which had never before been seen by man.

Dr. Hale, director of the observatory, is now in Rome, having gone abroad some months ago for his health. Professor Walter S. Adams, assistant director, gave out a statement covering the discoveries announced by Dr. Hale during the last year, and giving an outline of what Mr. Carnegie may expect in the way of verification of his preduction that startling astronomical discoveries are at hand.

These discoveries, the scientists believe, will come in rapid sequence when the 100-inch lens for the new 230-foot telescope is brought here from France and installed. Among the prospective discoveries or demonstrations, the one probably of greatest interest to laymen is the effect of sun spots on the atmosphere enveloping this planet. The deductions of Dr. Hale and his assistants may revolutionize present theories of meteorology and make weather predictions an exact science.

"When Mr. Carnegie was here at the observatory, a year ago," said Professor Adams, "he declared that Professor Hale was the greatest astronomer in the world today. Dr. Hale made one of the most wonderful discoveries of the age a short time before Mr. Carnegie's visit, when he determined definitely that sun spots were



George E. Hale, '90

great electrical vortices moving across the sun like terrestrial cyclones. We are now working on the probable effect of these sun spots on the earth and stars. We have already discovered that the spots do affect both earth and stars magnetically, and have something to do with magnetic storms on the earth. This is an old theory, but never before was

it definitely determined. We were able to do it by means of our sixty-foot tower telescope.

"Our new 150-foot tower telescope will be completed in a few months. The telescope will be 150 feet long and the spectroscopical instruments will be placed eighty feet below that, making the entire telescope 230 feet long. There is nothing like this anywhere in the world, and it will magnify the image of the sun many times more than the present telescope, and we hope to make many new discoveries and deductions.

"We have been using our great sixty-inch reflecting mirror telescope for two years, with which we have made many excellent photographs of the sky, revealing thousands of objects and stars never before seen. Many of these objects are too small to be seen with other instruments, or if they are seen the image is too small to study the structure. Most of our work is studying the spectra of the stars and adding our results to those accomplished by other observatories in working out various problems. Our new 100-inch reflecting telescope, which we hope to have done in another year, as soon as a perfect lens can be cast in France, will add greatly to the work."

Mr. Towne Provides for Young Men

Even among his classmates, few were aware of the benefactions of Linwood O. Towne, '78, to deserving young men who were struggling for an education. In his will, which was recently probated in Salem, a provision is made for continuance of this assistance to men studying at educational institutions with courses uncompleted until they shall be graduated, or decide to leave to take some employment. These men will not be asked for payments on loans advanced where such payments would handicap the men too soon after getting employment. It also provided that the beneficiaries will not be pressed for payment of notes if not convenient, until five years after they have been graduated.

Death of L. P. Kinnicutt, '75

After an illness of some months Leonard P. Kinnicutt, '75, director of the department of chemistry, Worcester Polytechnic Institute, Worcester, Mass., passed away on February 6th. In his death the alumni body has suffered a great loss and the State and the Nation a tireless and resourceful worker in the field of sanitary chemistry. Professor Sedgwick, who was one of his close friends, contributed the following appreciation of Professor Kinnicutt's work to the *Boston Transcript:*

"Science, education and the State have each and all suffered a heavy loss in the death of Professor Leonard Parker Kinnicutt, head of the department of chemistry in the Worcester Polytechnic Institute. The passing of a prominent politician or of a millionaire often excites more comment than does the death of a quiet yet accomplished worker in the fields of science and education, and it seems to me therefore fitting that the citizens of Massachusetts should pause for a moment to recognize and mourn the loss of one who has done high and helpful service in the fields of science and scholarship.

"Professor Kinnicutt's specialty was sanitary chemistry, a subject somewhat encroached upon but by no means eclipsed by the modern development of sanitary biology and in the subject to which he had chiefly devoted his life, Dr. Kinnicutt had made himself a leader of the very first importance.

"Born in Worcester in 1854 he was graduated from the course in chemistry at the Massachusetts Institute of Technology in 1875. The next four years he spent in professional studies in Germany and during this period had the first warning of the insidious disease from which he has finally died. The writer made his acquaintance at the Johns Hopkins University in '79, where the young Kinnicutt was a pupil of Remsen. Proceeding to Harvard, the difficult degree of doctor of science was won in 1882 and here also Dr. Kinnicutt served as instructor in chemistry until made assistant professor at the Worcester

Polytechnic Institute. Since 1888 he had been director of the large and important department of chemistry in the Worcester institution, where he had long been a favorite and beloved teacher whose pupils are scattered all over the country in positions requiring responsibility as well as technical skill.

"Professor Kinnicutt's principal work has been done in and for the State of Massachusetts. In 1883, for example, he was admitted to membership in the American Academy of Arts and Sciences, which carries upon its rolls the leading scientific men of Massachusetts, and from 1902 to the present time he has served as chairman of one of its most important committees. He has had much to do with the New England Water Works Association, the Boston Society of Civil Engineers and the New England section of the American Chemical Society, of which section he has taken his turn as president. His name, however, is almost as well known throughout the whole United States as it is in Massachusetts, as is shown by the fact that he has been since 1903 consulting chemist to the State Sewerage Commission of Connecticut; has served as vice president of the American Association for the Advancement of Science, and as associate editor of the *Journal for Industrial and Engineering Chemistry*. Moreover, unlike many excellent American scientific men, Professor Kinnicutt had an excellent international reputation with membership in the London Chemical Society and in the Chemical Society of Germany, and honorary membership in the Society of Managers of Sewage Disposal Works in England. He was an authority on the disposal of wastes; on the sanitation of air, water and gas; on methods of chemical analysis, and on many other branches of the huge and important subject of chemistry which he had made so much his own. His latest work, prepared in conjunction with Winslow of the Institute of Technology and Pratt of the State Board of Health of Ohio, is the latest and by far the best treatise on the subject of sewage disposal in the English language, and one which bids fair to remain a lasting monument. Shortly before his death he was chosen president of the Section of Hygiene and Sanitation of the International Congress of Applied Chemistry.

"I can hardly trust myself to speak of Professor Kinnicutt's personality. This was unique, lovable, and altogether charming. Kindness and friendship such as his life exemplified could not further go. He was critical, yet just; fearless, yet considerate of others; honest to a fault; a hard worker; and to a degree nowadays unusual, an accomplished and cultivated gentleman."

The Spirit of Technology

The following is an extract of a letter from a graduate of a few years ago, who, in a measure, worked his way through the Institute:

"I beg to bother you once more to request that, if you know of the date the Committee on Ways and Means will report their findings to the Legislature, to kindly inform me. I would be very glad to go to Boston a few days previous and confer with the representatives from my home district, as well as to other members, in order that I may relate to them personally the kindness, the generosity and the spirit of helpfulness prevailing throughout the Institute, from the students to its President, towards the men that go there with limited means."

Technology Club founded in Worcester

On January 31 the Worcester Alumni held a meeting in co-operation with the Committee on State Aid which was so successful that it was decided to form a local alumni association there.

Spaulding Bartlett, '89, was elected president and H. M. Latham, '93, was made secretary. The executive committee, which consists of the president, secretary, F. E. Davis, '83, A. S. Heywood, '92, and L. E. Vaughan, '02, will decide on a name and draft the by-laws.

Copley-Plaza Hotel, to be built on the site of the Old Art Museum

Passing of the Old Art Museum

The old Art Museum on Copley Square is being torn down to make room for the new Copley-Plaza Hotel which is to be erected there. It is expected that the new hotel will be completed before January 1st, 1913. The plans call for what will be one of the most notable hotels in the country. One of the features is an immense ball room suite with a private entrance from the street. The ball room will have a stage and back of the stage will be a large serving room connected by elevator with the kitchen, in the basement. Over 600 people can be comfortably entertained in this room at banquets.

Fiftieth Anniversary Plans

Plans for the Congress of Technology that will convene in Boston April 10 and 11, to commemorate the fiftieth anniversary of the granting of the charter to the Institute, are progressing most satisfactorily.

The committee now contemplates placing much emphasis on the social side of the convocation and indeed, if certain matters take a fortunate trend and the Legislature passes favorably on our appeal for an increased state grant, it is likely that the affair will take on the semblance of a love-feast.

It is expected that local alumni associations will all hold meetings on the memorial date. The committee will suggest a program for these meetings and in the event of any important announcements local associations will be notified by telegraph.

Illuminating Engineering

The subject of illumination and photometry has been added to the subjects taught in the electrical engineering department. This is treated from the standpoint of what is generally called illuminating engineering and is made an optional study. The instruction is by lectures, recitations and laboratory work under the direction of Professor Wickenden.

Why $100,000 from the State

BECAUSE the Institute asks for no more than is absolutely necessary to maintain its efficiency; a smaller grant would leave it either to fall short in efficiency, or to sacrifice its principal to immediate necessities.

Since 1894 the number of our students has increased from 1,200 to 1,600, the annual cost of instruction in excess of receipts from tuition fees from $66,000 to $210,000, although the tuition fee has been advanced from $200 to $250.

BECAUSE one hundred thousand dollars is no more than Massachusetts can afford. The valuation of the state in 1905 was nearly $5,000,000,000; the value of its manufactures nearly $1,200,000,000. An appropriation of $100,000 is but $20 on each million of the state's wealth. An increase of even 1% in the value of manufactures, by reason of increased efficiency in technical education, would amount to $12,000,000. Merely as an investment, over and above the advantage to its reputation and its young men, the state cannot afford to grant less.

BECAUSE the *economic return to the state* is manifold. The prosperity of the state depends directly on abundant employment, and a wide range of opportunity for its citizens. The technically trained man not only has assured employment for himself, but he makes possible—as an engineer, an employer, or an inventor—the employment of many others. If higher technical education is restricted by cost, or inferior in quality, the young men who would otherwise obtain it are left to fill up the lower ranks, the industrial army becomes inefficient or helpless for lack of leadership.

The industries of Massachusetts are subjected to increasingly severe competition. They can only maintain themselves by keeping their methods and processes at a high level of scientific efficiency by employing the best trained chemists and engineers. Unless efficiency and economy are thus secured, there will be an increasing tendency to transfer industries to other states, where raw materials and fuel are cheaper, and labor laws less strict—with grave results for Massachusetts and her working people.

Associate Membership in the Alumni Association

Any former student of the Institute making application for associate membership to the secretary of the Alumni Association, and passed upon favorably by the Executive Committee, can become an associate member on the payment of the regular dues of $2.00 per year, which includes subscription to the nine issues of TECHNOLOGY REVIEW.

The growing strength of the alumni, not only in Boston, but all over the country, has made the local club meetings of unusual interest, and former students not now members of the association should take the opportunity to become identified with it. Application blanks may be had of Walter Humphreys, secretary, 491 Boylston St., Boston, Mass.

$1,000 to Mrs. Richards for Research

A complimentary luncheon was given to Mrs. Ellen H. Richards, '73, by the M. I. T. Women's Association, on January 7th, in commemoration of the conferring of the honorary degree of Doctor of Science upon her by Smith College, last October. There were about 100 members present. During the luncheon, a purse of $1,000 was presented to Mrs. Richards to be used for carrying on her research work at the Institute. The officers elected at the business meeting following the luncheon were as follows:—Mrs. Ellen H. Richards, '73, permanent president; Margaret E. Dodd, '92, first vice-president; Laura B. Plummer, '96, second vice-president; Mildred E. Blodgett, '07, correspondent secretary; Elizabeth B. Babcock, '09, recording secretary; Annie E. Allen, '97, treasurer; C. Belle Kenney, '86, Grace A. Norris, '87, Dora Williams, '96, executive committee.

"EFFICIENCY" KEY-NOTE OF ALUMNI BANQUET

One of the most profitable meetings in the history of the Association—Site will be secured this year—Major Briggs presented with a watch

The annual banquet of the Alumni Association which was held in the large banquet hall of the Somerset, January 4th, was full of genuine enthusiasm and was one of the most profitable meetings that the Association has had for many years. There were about 400 present and although the program was long, nearly every man remained until shortly before midmight when the last speaker had finished. A. Farwell Bemis, '93, the retiring president, proved himself to be a most resourceful toast-master, and his unexpected sallies livened up the program which was in its general nature, a serious one.

During the course of the dinner, John L. Bachelder, '90, from his place on the floor asked for attention and in a very happy speech, presented Major F. H. Briggs, formerly chairman of the committee on athletics, with a handsome gold stop watch, in recognition of the signal service he has rendered in the establishment and development of Institute athletics.

Jasper Whiting, '89, the first speaker, described the work of the committee on state aid. He outlined the reasons for asking the state for a grant of $100,000 a year, and appealed to his hearers to use every legitimate means to show the members of the legislature, the justice of our request. In closing, Mr. Whiting said, "The keynote of the discussion tonight is efficiency. The Institute of Technology stands for nothing if not for efficiency. Let your work with the legislators as sons of Technology, be efficient, for only by being efficient will it bring results. Gentlemen, your Alma Mater calls upon you tonight to render her a great service. In so doing you will at the same time render an equal service to the great state of Massachusetts."

The topic selected for the evening was "Efficiency," and the speakers who had been invited to address the association were President Maclaurin on "Educational Efficiency;" George W. Perkins on New York on "Efficiency in Organization and Administration;" Frederick W. Taylor, of Philadelphia, on "Industrial Efficiency," and Louis K. Rourke, '95, street commissioner of Boston, on "Efficiency in the Administration of Public Works."

Dr. Maclaurin arose amid a storm of applause and created considerable more when he stated that this would be the last time that the President would mention the site question as a problem at an annual alumni dimner. Dr. Maclaurin's address is given in full elsewhere in the REVIEW.

Mr. Perkins, who has just left J. P. Morgan & Company to follow a special line of work along the lines of coöperation between capital and labor, made a plea for industrial harmony and for the kind of coöperation that makes for efficiency and stability. He declared that coöperation must take the place of competition and if it is to be real and profitable, there must be a studied and harmonious correlation between manager and stockholder, between manager and laborer, between manager and the public and between manager and the government. Mr. Perkins' speech, which is published in full elsewhere, is well worth reading because it represents the deliberate conclusions of a man whose experience in industrial organization and management has, perhaps, been as great as that of any other.

Mr. Taylor told his audience what scientific management was not, and then he instanced some of the results of scientific management in various lines of business. "Scientific management," said Mr. Taylor, "is one of the roads that

leads to the solution of the problem of the working man that confronts us today."

"Scientific management had its beginning about thirty years ago, and the development has been very gradual. and it was not until about five years ago that any very serious thought was given to the new science. In no single instance has theory preceded practice. Practice brought forth reasons in every instance. At the present time there are about 50,000 men in this country working under the scientific management system, and these men are far more prosperous than other workers at the same lines of work, and at the same time the employers are more prosperous. Scientific management is applicable to every kind of individual or comprehensive industrial effort. Its large range of application embraces most every great and small unit of construction and of industrial processes. Giving the workingman a higher class of work, and at the same time making him the friend of his employer, is perhaps the greatest good of this new system. There is no exception to this rule. During the last thirty years there has never been a strike in a factory where scientific management had been in force. Making the laborer and the employer the best of friends is the one great aim of this system and this aim had been accomplished in every instance.

"The essence of the new system lies in four great burdens that the managers take upon their shoulders, namely—1, development of science in place of the rule-of-thumb methods, by making every act of the workman a scientific study and reducing all the knowledge to laws and formulæ; 2, the scientific selection of the workingmen themselves, and the teaching of them to do the work that they are best fitted for by nature; 3, the bringing of science and the scientifically trained workman together to work for the common good; 4, the assumption on the part of the managers of the enormously great duties that were formerly laid on the employee, putting more men on the side of the managers, and dividing the duties equally between the two sides.

"Thus, after a scientific study of bricklaying, the motions of the bricklayer could be reduced from 8 to 3, making it possible for the average layer to set about 350 bricks per hour under the new system against 120 under the old.

"Teaching the workman the science of his trade does not destroy initiative, but, on the other hand, gives the young man entering the trade a chance to get a training that brings more dollars to himself and to his employer."

When Mr. Rourke was called upon, the hands of the clock were approaching twelve, but the frankness of his address, his homely and apt illustrations, and the common sense that stamped his conclusions, held his audience until he had finished speaking. His subject was "Efficiency in the Administration of Public Works." "There is no doubt in my mind," he said, "that the majority of results being secured in municipal, State and National work are inefficient. The ordinary citizen in talking on the subject, nine times out of ten, will say that this inefficiency is due to graft, so-called. For the past five years I have been directly connected with public work involving millions of dollars, and can say that in all this work there was no sign whatever of graft. The chief waste due to political management is the entire change in the heads of departments and the change in the personnel of the employees with a change in administration."

Mr. Rourke was followed by Dr. Noyes the newly elected president of the, association who made a few brief remarks in acknowledging the honor conferred upon him. Both the new president and the retiring president were given a hearty round of cheers.

While the dinner was in progress, a telegram of greeting was read from the Northwestern Association. During the evening, Mr. Bemis was presented with a bouquet of roses by his classmates. Mr. Bemis acknowledged this token of regard, and, amid rousing cheers, presented the bouquet to Mrs. William Barton Rogers, who was a guest at the head table.

CONNECTICUT VALLEY MEN DINE

Springfield Alumni and Officials extend a Cordial Welcome to the President, and show the advantages of that city as a site for Technology

The activity of the members of the Technology Club of the Connecticut Valley in securing a site for the Institute in Springfield, Mass., has stirred up alumni feeling there to the highest pitch, and when President Maclaurin and the other Boston guests arrived in Springfield for the annual dinner on the evening of January 28, they found an enthusiastic crowd of nearly fifty men, all of them anxious to impress the President with the advantages of Springfield as a location for the Institute, provided it seems best to move that institution outside of greater Boston.

The dinner was held at the Hotel Worthy, and although the hospitality there is always of the best, the proprietor Frank L. Worthy, '86, outdid himself to show what real Connecticut valley hospitality means. Besides Doctor Maclaurin, the invited guests were J. W. Rollins, '78, chairman of the committee on state aid, Frank H. Rand, bursar, and I. W. Litchfield, '85, from Boston; Representative A. T. Langtry, editor of the *Springfield Union;* Charles W. Bosworth; Waldo Cook, representing the *Springfield Republican*, and C. P. Chase, president of the Board of Trade. Eben Stevens, '68, president of the club, was unable to be present because of his mother's death. No meeting is ever complete without Mr. Stevens, who is close to the hearts of all those who know him, and although the meeting was one of the most successful the club has ever had, there was an element lacking which only his presence could give. The dinner was of the fraternal kind and somewhat resembled the old game of "stage coach," nearly every man shifting his place between courses, and when there was any opportunity for it, Gleason, '03, led in a ringing song.

It was at a late hour when Mr. N. P. Ames Carter, '86, called the meeting to order, and Frank Page, '85, was asked to make a report for the delegates that went to Boston to offer the Springfield site to the President. Mr. Page's report fairly represented the spirit of the Springfield men who arranged this whole matter so effectively. His attitude, like that of the other speakers, was an absolutely unselfish one, showing that the dominating influence was Technology first, last and all the time, but if there was any possibility of moving from greater Boston they proposed to make the welcome to Springfield a most substantial one. George C. Gardner, '87, another member of the delegation, followed Mr. Page and told of some of the advantages of Springfield as a site for the Institute.

Doctor Maclaurin received a handsome ovation when he rose to speak. Referring to the offer the alumni of Springfield had made, Doctor Maclaurin said that he appreciated the warm greeting and that it assured him that whatever might be the future action of the officials of the Institute of Technology, Springfield believed that nothing was too good for the institution.

He spoke of the fact that many students come to Tech from all parts of the country, and that its founder came from the South. It has many students from the West and the middle West. It has among the choicest of its constituents the solidity and substantiability of New England. There are students from all over the world, and it is sometimes wondered why they come to this school when their own sections have such fine educational institutions. "It is because the technical education cannot be duplicated and because it leads all technical institutions in the country," said President Maclaurin.

He then took up the serious problem

of the Institute's finances. He said that it is no light thing that is asked of the Legislature to give the institute $100,000 a year, and it can only be defended by giving such reasons as can be given. "It must be remembered that Massachusetts has no great natural resources. It can keep in the front rank only by the intelligence of its people. That which cultivates this intelligence is a rich asset. He had heard on the train on the way to Springfield, a story that illustrated the Tech spirit and the skill of one of its graduates. A poor boy had worked his way through the Institute, and, after graduation, a large corporation offered him a position as general manager at a salary of $25,000 a year. He refused it, stating that he wanted a salary of $40,000 a year. The officers of the corporation demurred, but he replied that if they would hire him for this sum, at the end of the year, if he had not saved the company $100,000 a year, he would resign. At the end of the year the directors found that this Tech graduate had saved the company the sum of $750,000, and he still holds the position.

Criticism has been made by some of the request of the Institute for $100,000 a year from the Legislature for ten years, on the ground that it is too large. Some criticise on the ground that it is too small. President Maclaurin said that he could show conclusively that this amount is the minimum that is required. The Institute now exceeds its income by $30,000 a year. This does not mean that it is in debt, because it does not owe a dollar, but it has to draw on its assets for this amount.

"The state provides $25,000 a year that is about to end. The alumni fund of $40,000 a year also is about to end. It is certain that in providing for the future cost of running the institution it must obtain $100,000 from some source. The fees that the students pay only cover half of the expense. Tech is competing with the commercial world, and this a college does not have to do. It has to keep pace with the times, and large business concerns are all the time trying to tempt its professors away from it. Recently a professor in one of the department, who was receiving $2,000 a year, received from a business firm an offer of $10,000 a year, and he naturally accepted it. It has been necessary in the past five years to increase the salaries of the faculty by $75,000.

"By the progress of the times, the institution has been forced to adopt a new policy. In a few years it must get out of its present location in order to develop, and the officials have been very loath to make the move. It has been decided to do so, however, and this will be done in the present year. This means that the cost to the institution will amount to millions. When this move comes, the offer of Springfield will be considered most seriously, and if it is necessary to move from Boston, it will be the offer to be most favorably considered.

"The millions that Tech needs must come from its friends. It is not to be understood that the Institute is an extraordinary straits. At no time has its prestige been so great. At no time has it had so large assets. Graduates from Tech are welcomed in every industry, and in pure science.

"The offer that Springfield has made to the institution has awakened the alumni all over the country, and offers have come in from Cambridge, Worcester, Chicago and other places. If Boston does not want the school, others do. Springfield by its offer has done an immense service to the Institute and its future promise was never brighter."

Charles W. Bosworth paid a glowing tribute to his home city and its advantages, and said: "We don't want Massachusetts Institute of Technology here if it is not for the good of the Institute to make such a move, but at all events it is worthy of your most serious thought and careful consideration. We all have an understanding of the broad principles of business and commercialism that is produced by the M. I. T. spirit. It is a school of which we are all as proud, as we are proud of the spirit it fosters."

James W. Rollins of the contracting firm of Holbrook, Cabot & Rollins of Boston, a member of the Corporation of

the Institute and chairman of the committee on state aid, was the next speaker. He said: "When I feel myself being drawn into the maelstrom of Technology spirit tonight, I cannot help feeling confident that it is the very spirit that will carry the Institute through. It has loyal men carrying it through to success, and we need every one of them. I am a Boston man, I have always lived there. I hope to see Technology always stay there, but if it is going to move anywhere, I want to see it come to Springfield."

Representative A. P. Langtry said: "There is one very serious thought in my mind as to the Massachusetts Institute of Technology coming to Springfield. It is the river-front problem, the most important one by which the city is confronted. Technology can help to solve it. That is one consideration that, apparently, no one has thought of tonight, which will make the students give unanimous vote for bringing the institution to this city. You men who are fighting for it stick, for you are in the right. Springfield is the very center of New England, and much more easily reached than Boston. The diversity of Springfield's industries makes it an ideal place for the institution. Nowhere are the manufactories more diversified or better represented than here. Springfield is a cultured city—a beautiful city. It is a great big park, the most beautiful city in the world. Therefore, it is a splendid place for the Institute to come to. We want a bigger, better, busier Springfield, and we want M. I. T."

Frank H. Rand, the bursar of the institution, said: "For the past 10 years we, at Boston, have been considering the question of the changed conditions of M. I. T., including the new site. We are overcrowded, almost to the bursting point. I believe almost any change would be an improvement."

The whole attitude of the speakers from Springfield showed a fine spirit of appreciation of the Institute and of its work and a strong desire that it might be induced to locate in that city if it seemed best to the authorities to do so. With their invitation went an assurance that the citizens they represented were only waiting for some encouragement to back up the offer of the site with substantial gifts of money. In fact, Mr. Chase, president of the Board of Trade, said that he thought that Springfield appreciated the work of the Institute sufficiently to give it $50,000 if it decides to build a new institution in Boston.

Location of Site offered by Springfield Alumni indicated by the cross

The last speaker was Clarence Whitney, '91, of Hartford, who backed up the arguments of the Springfield alumni in a very amusing speech and wound up by stating that he had conferred with the mayor of Hartford and was authorized to offer the president a part of $15,000,000 if it would locate in Hartford.

Boston Herald

The next morning Doctor Maclaurin and his party were taken out to the proposed site about twelve or fifteen minutes' ride from Springfield by railway or by two lines of trolley cars. The committee found a magnificent location consisting of two hundred acres at an elevation of about one hundred feet and overlooking the Connecticut River with a view of the Berkshire Hills in the distance. The land slopes down to the Connecticut River where could be located boat houses, bathing houses, etc. It is not far from the old Harvard-Yale rowing course. It would take but little work on the part of a landscape gardener to make the place almost a paradise.

It is fair to say that the enthusiasm of the local committee was largely shared by the visitors as they contemplated the possibilities of this splendid location.

More Weeky Luncheons

In the last TECHNOLOGY REVIEW we failed to notice under the title of fixed luncheons the weekly luncheons of the Washington Society which occur at Wallis' Café, 617 12th Street, from twelve to one every Wednesday noon.

The meetings of the '01 to '10 Luncheon Club at the American House Rathskeller, Boston, on Fridays from 12.30 to 1.30, have been growing in size and interest ever since they started. The question of a private room is now being agitated.

In Chicago, the Northwestern Association holds its weekly luncheons at Vogelsang's Restaurant, 178 Madison Street, on Thursdays, at 12.30 p. m., and the Technology Club of Rhode Island at Providence holds its weekly luncheons at Brucker's Hotel, Thursdays, at 1 p. m.

Arnold W. Brunner, '79, of New York City, won the award for the plans of the new State Department building which is to be erected in Washington. Mr. Brunner is architect for the cities of Cleveland, Baltimore, Grand Rapids and Rochester. He is ex-president of the New York Chapter of the American Institute of Architects, and for two years was a member of the Art Commission of New York City.

ENTHUSIASM RIFE IN CHICAGO

Dr. Noyes guest of Northwestern Association at Annual Dinner—Dean Goss, '89, and Prof. Mann, '94, of University of Illinois pay tributes to Alma Mater

The annual dinner of the Northwestern Association was held at Vogelsang's restaurant, Chicago, January 7th, and was full of the old time enthusiasm that has always been a feature of the gatherings of our brethren in the middle west. There were about one hundred men present and Johnie Hand, who, with his orchestra, has become an institution of of the Northwestern Association, waved the baton.

The guests of the evening were Dr. Arthur A. Noyes, '86, the new president of the Alumni Association, Prof. W. F. M. Goss, '89, dean of the College of Engineering, University of Illinois, and Prof. Frederick M. Mann, '94, head of the Department of Architecture, University of Illinois.

The noise committee, which was as effective as usual, and under the leadership of Moore, '01, led in singing a number of parodies from the song-slips with which the guests were provided. The president of the association, Mr. Frederick K. Copeland, '76, introduced the speakers.

Dr. Noyes, who received a rousing welcome, took the men into his confidence and gave a good heart to heart talk. Among other things, he dwelt at some length on the site problem and declared that probably before the end of the year there would be no such thing. He also touched on the disposal of the present property, and his statements carried great satisfaction to his hearers, showing that the new Technology was uppermost in the minds of every man. He pictured the rise of the Alumni Association in power and influence and showed how today it was one of the most effective institutions of its kind in the country; that it was taking direct responsibility in coöperating with the President and the Corporation and that its possibilities of accomplishment were almost un limited. He laid much stress upon the ability of the alumni to assist in a large way in providing new buildings for the Institute and stated that the entire problem depended chiefly upon them. Dr. Noyes was given the assurance of the Northwestern Association that when the time came its members would not be found wanting, either in providing money or in giving effort.

Dr. Noyes also spoke on the application for a state grant of $100,000 annually for ten years, and described the effective work of the alumni committee on state aid. He also called attention to the Congress of Technology which will be held on April 10th and 11th, to celebrate the fiftieth anniversary of the granting of the charter to the Institute. The commemoration of that event will be marked by the presentation of papers by prominent alumni, on the industrial development of the country due to the establishment of schools like the Institute of Technology; the proceedings of the congress to be published in a memorial volume. Dr. Noyes also told about the work of the committee appointed to secure a site for the Summer School of Civil Engineering, adding that the site had practically been purchased and would soon be presented to the Institute by the alumni donors. He stated that never was there a time when the instruction at the Institute has been as efficient as it now is, notwithstanding its hampered condition because of lack of funds. The plan of education is being constantly developed and new methods are being tried as soon as they prove desirable. Student life at the present time is on a most satisfactory and sound basis, in fact probably better than at

most institutions. He paid a tribute to a former President when he said that the efforts of Dr. Pritchett had paved the way to the improved social conditions of the students at the present time.

Dr. Noyes' remarks were most gratifying to all of his hearers and created great enthusiasm.

When the speaker had concluded, E. M. Hagar, '93, rose and stated that the entire association was heartily in favor of the policies outlined by Dr. Noyes and, he added, with becoming modesty, that when the Northwestern Association was in favor of any policy concerned with the Institute, its policies were bound to go. He spoke glowingly on the subject of new site and new buildings and declared that the Universal Portland Cement Company, of which he is president, would offer to the Institute of Technology all of the cement necessary to build the new Institute, and that this donation would come as but one of the many that the Northwestern Association hoped to make. Hagar sat down amid a storm of applause and it was some moments before the men realized what his generous offer meant to the Institute.

The next speaker, Professor Goss, took for his subject "The Spirit of the Tech in the East and in the West." His address was prepared at the request of the Northwestern Association in order that they might know what the University of Illinois was doing and what influence Technology had on the work of the University. Professor Goss spoke in part as follows:

"For nearly fifty years the Institute of Technology has constituted a significant element of leadership in many different directions, promoting efficiency and pointing the way to new undertakings. For half a century, Tech men have been going out to all parts of the country to build railroads, to assist in railway operations, to plan and direct manufacturing establishments, to design the machines or other devices to be manufactured, to modernize the sanitary and engineering aspects of cities, to become members of college faculties and in many ways to have their part in bringing about the present-day success of a very busy people. It has somehow happened that localities into which Tech men have entered have become inoculated with a better appreciation of things scientific and technical. Not only have individual business enterprises been promoted, but a new spirit has arisen in many cases dominating communities of people; a spirit of approval for things which are right. Moreover, localities thus affected have become centers of distribution from which similar influences have been passed on to new localities, until the infection, either primary or secondary, has become wide-spread, and no one can estimate the sum total of the good that has been accomplished thereby. As one having some acquaintance with engineers and with their undertakings, I do not hesitate to venture the opinion that the effect has been far more significant than most Bostonians would claim or imagine.

"Among the undertakings which have especially profited by the work of the Institute, I may properly mention the educational institutions of the middle west. I limit my reference to these because it is with them that I am best acquainted. Many of these institutions have received Tech men as members of their faculties. The number has not been large; it has, in fact, been altogether too small, but the influence exerted has been of a high order. Of still greater importance than the helps rendered by this small group of men, is that which has come to the educational institutions of the West from Tech men in industrial positions. Such men have had their part in creating an intelligent understanding on the part of the public, concerning the purpose and value of engineering education. Their influence has been general in its effect; it has rarely concerned itself with matters of detail. It is this fact, perhaps, that has saved many of the colleges of engineering of the middle West from being merely little 'Techs'—poor imitations of the source of their inspiration. Instead, while endeavoring to adhere to the broad fundamental conceptions which have

controlled in the development of the Institute, they have grown up as indigenous to the soil. Each one has developed its own form of administration and has placed emphasis upon lines of work of its own choosing, the assumption being that in so doing it has best served the need of its students.

"The University of Illinois, for example, has gained very much from the Massachusetts Institute of Technology. Its dean makes personal confession of the fact that in a period of thirty years, during which his field of labor has been in the Mississippi Valley, he has rarely failed to make an annual pilgrimage to the Institute that he might understand something of the progress of its current work.

"When the Institute began in Boston, Illinois was essentially an agricultural state. The people of Illinois at that time thought much of their prairies and little of their shops; but in 1900 there were 19 states in the Union, the combined population of which did not equal that of Illinois. Its beginning was as an agricultural state, and the importance of its agricultural interests have steadily increased; but, notwithstanding this fact, only one-quarter of the people in the state today depend upon agriculture for their support, while one-half of all the people depend for their support upon the manufacturing, mining and transportation interests. Massachusetts used to be third among the states in the value of her manufactured products, but today, Illinois is third and Massachusetts fourth.

"In these facts are to be seen the foundation upon which many people in Illinois base their expectation with reference to the future development of its school of technology, which, under present conditions, is represented by the College of Science and the College of Engineering of the University at Champaign. The process by which this institution has thus far been developed is typical of that which has been followed by most other Western colleges. The work of the campus has been preceded by a development of interest in education on the part of the public. Evidences of the existence of such an interest are not lacking. For example, it is rather usual for the governor of Illinois to devote a considerable portion of his message to a presentation of University affairs. Such matters are recognized as affairs of state. The various scientific and technical departments of the university are regarded as having advisory relations with the departments of state. The State Geological Survey, the State Water Survey, the office of the State Entomologist, as well as the State Agricultural Experiment Station and the State Engineering Experiment Station, are all located on the university campus. The newspapers discuss plans which may be proposed for the extension of work. It is almost true that the days of public indifference to university education are past.

"Difficulties arising from a spirit of rivalry between the older institutions of learning and the state university, have in this state ceased, and each year supplies an increasing number of people who seriously and earnestly desire a university which shall be adequate to the needs of the state and who, as citizens, are willing to pay their share in securing it. The legislature of Illinois has recently adopted the following extraordinary resolutions:

> Therefore be it resolved, by the Senate, the House of Representatives concurring herein, That it is the sense of this General Assembly, that the Board of Trustees of the University of Illinois should adopt such a policy as will in their judgment attract to, and retain in, the service of the University and the State, the best available ability of this and other countries.

"The public patronizes the University with the same ardor that characterizes the support it extends to it. The number of students in the whole organization, including the Colleges of Medicine, Dentistry and Pharmacy in Chicago, exceeds 5,000. In Champaign, the student attendance is in excess of 3,500, of whom 275 are in the Graduate School and 1,300 are in the College of Engineering. The latter college offers nine courses in engineering and two courses in architecture. Its organization also embraces

the Department of Physics, which serves the general interests of the University. It is an interesting fact that the Department of Architecture located in the midst of Illinois prairies has come to be one of the largest departments of its kind in the country, and since its destinies are now presided over by a graduate of Massachusetts Tech (F. M. Mann, class of '94), no one can tell to what dimensions it will grow. There is a conviction on the part of those who are carefully studying the situation that fifteen years hence, say by 1925, the enrollment of students in the College of Engineering alone, will have reached 3,000. Plans for the development of the plant are being based upon this assumption."

Mr. Copeland then introduced Professor Mann, '94, who told the Association about the work of the architectural department of the University of Illinois and emphasized the influence that the Institute has had on the architectural development of the whole country. He said that the architectural graduates of the Institute were the prominent men in their profession in almost every state in the Union, and that the instruction in architecture was largely given by those who had studied at Technology.

John Shortall, '87, next told about the Technology Boat Club which has been financed by the Northwestern Association. Shortall had seen the crew at work during the summer and told about the wonderful success that the club has had, asking the association to pledge its continued support to this activity.

The character of the dinner was somewhat different from those of former years. It had the unusual virtue of being started at seven o'clock as advertised, and was on the order of a German stein dinner. It proved to be both profitable and popular.

On Saturday evening, before the dinner, about twenty members of the association entertained Dr. Noyes and Professor Goss at a luncheon and had an informal talk about Institute matters.

Chicago would Treat Tech Right

President Richard C. Maclaurin, of the Massachusetts Institute of Technology, is looking around for a good site for his famous school, preferably one with light, air and quiet and plenty of local appreciation thrown in.

He has asked the Massachusetts legislature to increase the school's appropriation from $25,00 to $100,000 for the next ten years. Unless that is granted, "Boston Tech," he says, "will have to pull up stakes and move to some place where the cost of living is within its means."

Without consulting with Doctor Gunsaulus of the Armour Institute of Technology nor with the Association of Commerce, we are moved to say that President Maclaurin could do no better than boldly bring the Massachusetts Institute of Technology to Chicago. Let it still bear its honored name, but let it get its roots down into the soil where the soil is rich. We could support a "Boston Tech" with our loose change and we wouldn't, like some cities we know of, have to search all the hinterland round about to find the money. —*Chicago Evening Post.*

Rents Will be Lower on the Cape

The Class of '91 will take a three days' outing in June, celebrating their 20th anniversary. The committee have selected Osterville from the list of places under consideration as offering, on the whole, the best opportunity for a good time. Here they will have a dormitory to themselves, an amusement hall in case of rain and for evenings, the Sepuit golf course, the ocean, a sandy beach, several excellent tennis courts, and a good sized power boat,—the two latter items being through the courtesy of friends. Osterville is some 60 miles from Boston, on the south side of Cape Cod about half way between Buzzards Bay and the elbow.

NEW YORK CLUB MAKES MERRY

Dr. Maclaurin calls attention to recent notable achievements of "Tech" Men—Charles Hayden, '90, and Harold Binney, '88, among the speakers

The annual dinner of the Technology Club of New York which was held at the Hotel Knickerbocker, January 21, was a spirited affair, about 175 men attending.

Allston Sargent, '98, chairman of the dinner committee, received the guests and greeted the new arrivals by introducing each to the "welcome to our city" table, which was laden with *hors d' œuvres* and which was also emblematical of the boroughs of Greater New York (Manhattan, Bronx and Martini). The title of this appetizing symposium was "Fantasie Parisienne." We print this as a matter of news, for as the sign was hung at a little distance above the table, it is hardly likely that any one saw it.

The dinner began promptly at 7.30, and was only declared an unqualified success when the cheers of the various classes entirely drowned the orchestra.

George C. Whipple, '89, acted as toastmaster,and his felicitous introductions of the speakers of the evening proved to be an important feature of the dinner. Harold Binney, '88, president of the club, the first speaker, indulged in some historical reminiscences of the old Technology Club, and stated that the recent news from astronomical centers indicated a disturbance in the celestial group of Technology clubs with accumulating evidence that New York is to be a star of the first magnitude.

Charles Hayden, '90, representing the Technology men of New York and Boston made a ringing address on the value of technical training. His talk was spirited and inspiring throughout, and furnished a striking example of the good results that have come from Course IX.

Francis H. Hutchins, Williams, '00, whose reputation among Technology men in New York as an entertaining speaker was established during the days when a joint club house for the alumni of New England colleges was being contemplated, was next introduced, and he kept his audience in roars of laughter. Alexander R. McKim, '85, the first president of the club, was called upon and made a short address, which was received with enthusiastic applause.

Toastmaster Whipple then introduced Doctor Maclaurin, president of the Institute. Doctor Maclaurin brought encouraging news in regard to the matter of site and of the money needed to build new buildings. He outlined the plans for a Congress of Technology, April 10, which is to commemorate the fiftieth anniversary of the granting of the charter to the Institute.

He referred to the added $10,000,000 gift from Andrew Carnegie to the Carnegie Institution and added: "The donor said truly that all that he had given toward the encouragement of research had been fully justified by the discovery of a single genius and the wonderful work that genius had accomplished in the Carnegie observatory at Mt. Wilson. It should be a source of great pride for Tech men to know that this oracle is a Tech man, Prof. George E. Hale, a graduate of M. I. T. of the class of '90. His epoch-making researches in astronomy and astrophysics have added a new luster to American science.

"There is, I think, an undue amount of pessimism in this country with reference to the scientific achievements of its own men. Too often it is suggested that with all the opportunities that are here presented, with all the magnificent equipment that is placed at the disposal of our men of science, too little work of really first importance is done in this country. I do not share that pessimism, but I do

think that though we produce many front-rank men, we often lack the grace to appreciate their real importance."

It was rumored that Prof. R. H. Richards was attending a banquet at the Plaza Hotel, and Francis C. Green, '95, secretary of the club, chartered a taxicab and kidnapped him without a struggle. He was greeted by the Technology men with hearty cheers, and then in his own charming manner he told of some of the interesting problems which were engaging his attention.

The committee in charge of the dinner consisted of Allston Sargent, '98, F. C. Schmitz, '95, Kaludy Spalding, '89, and F. G. Cox, '03.

Annual Meeting of the Alumni Council

The report of Secretary-Treasurer Humphreys at the annual meeting of the Alumni Council, January 2, showed a tremendous growth in alumni activity during the past few years. It will be interesting to know that the report of the Alumni Association on January 18, 1907, showed that the annual receipts were $2,486.64. Four years from that date the receipts of the association were $18,620.54. The receipts of last year are about $1,500 more than for 1909. The deficit for the year is only $348 as against $1,637.47 a year ago. It is also a matter of satisfaction to record the fact that, for the first time in its history, the TECHNOLOGY REVIEW has a credit balance at the end of the year. The actual amount is only about $100, but the tendency is all in the right direction.

Most of the special alumni committees have done valuable constructive work, not only in alumni affairs but in assisting the Institute. The Committee on the Summer School of Civil Engineering reported material progress in securing a site. This committee, like most of the others, is financing its own projects. The Committee on Fire Protection Engineering recommended that the subject be treated in as much detail as may be found practicable in a series of lectures at the Institute open to all engineering courses, and that it be offered as an option in some of the existing courses, possibly that of chemical engineering as soon as financial conditions will warrant. The committee appointed to consider the eligibility of students of the School of Mechanic Arts, which was connected with the Institute from 1876 to 1888, offered a carefully prepared analysis of the status of the members of the school in their relation to the Alumni Association. They recommended that all graduates of the School of Mechanic Arts be eligible to associate membership.

As this report is of special interest, it will be printed in the March number of the REVIEW. Professor Richards, '68, for the Committee on Permanent Funds and the Rogers Scholarship Fund, showed that the loans to students were being paid back with greater promptness and in consequence the fund available for this purpose was larger than ever before. The Walker Memorial Committee reported that the funds on hand amounted to $131,000.

It was decided that except in particular cases, special committees should be discharged at the end of each fiscal year.

Francis C. Green, '95, was reëlected a member of the Committee on Permanent Funds. Dr. J. Arnold Rockwell, '96, was reëlected on the Advisory Council on Athletics. A. F. Bemis, '93, Theo. W. Rollins, '78, and F. L. Locke, '86, were chosen as new members of the nominating committee.

Communication

BOSTON, MASS., Jan. 25, 1911.

Editor Technology Review:—

The class of 1900 enjoys the presence of triplets among its junior membership: Barbara Blair, William Ezekiel and Laura Elizabeth Wentworth, and I question whether this is a distinction enjoyed by any other class of the Institute. In order that this statement may be confirmed, I should like to issue a challenge in behalf of the class of 1900 to our other fellow-alumni to prove that they can do any better; if not, does it not seem proper that Wentworth's accomplishment should be appreciated in some form or manner by the alumni association? This is more than a confirmation of Bemis', '93, recent "bon mot" that "The recent year has seen something come out of nothing—'00."

N. J. NEALL.

JOLLITY IN NEW BEDFORD

Tech Club has a successful Meeting and gives President Maclaurin a Snow Shovel for Greenbacks

There was a sound of revelry at the New Bedford Country Club on the evening of January 25th,—the occasion of the annual dinner of the Technology Club of New Bedford. Forty stalwart sons of Tech were present, and the guests of the evening were President Maclaurin of the Institute and I. W. Litchfield, '85, of the TECHNOLOGY REVIEW. Secretary Wing arranged many surprises, one of the most agreeable being a good old-fashioned steak-and-onion dinner. When the guests were seated, they found an attractive package at each place. The gifts proved to be various noise-making instruments, and although these were not necessary to make the evening a lively one, they added the last delicate touch to the celebration. Doctor Maclaurin was the guest of the association during the extraordinary blizzard a year ago, when by dint of exertion he and the reception committee reached the club-house for dinner about ten o'clock in the evening. This episode was not forgotten, and during the evening he was presented with a snow-shovel which he received with the remark "that it might be intended either for the shoveling of snow, or the raking in of greenbacks." The menu cards were embellished with photographs of various summer outings of the New Bedford club, principally of George Nye's cottage and Allen's pond. Chase had collected a singing contingent by virtue of *habeas corpus*, which carried out the musical program without interruption, as there are no neighbors near the Country Club. Mr. Litchfield, who came at short notice to fill the place of Professor Richards who was unavoidably absent, spoke of the work of the Committee on State Aid and of the growing activity and importance of the Alumni Association. After Mr. Litchfield, the quartet led in singing some Tech songs, whereat Charles Allen, '85, appeared with a handsome bouquet of vegetables which he presented with "painful pleasure" to Mr. Stetson, the leader.

Stetson, in responding for the quartet declared that they appreciated radishes more than greenbacks declaring "none of us can read a note." President Maclaurin was greeted with a rousing cheer, when he invited his hearers to attend the Congress of Technology on the occasion of the fiftieth anniversary of the granting of the charter to the Institute, and gave some idea of the importance of this gathering. He said that he was surprised to read in one of the Boston papers that Technology was a local institution, and proceeded to show its cosmopolitan character and more than national influence. He reminded his hearers that more than one half of the students come from outside the state, many of them from localities where there are state institutions that offer a technical training with practically no fee to residents of those states. He thought it very significant that many preferred to come to the Institute, pay a large tuition fee and heavy living expenses. It is clear they come because Tech gives the best opportunity for a technical education, and they will continue to come so long as the people of the state assist in maintaining this institution in the very front rank. The President referred to the fact that the state had no peculiar advantages in the way of agriculture, minerals, forests or other natural resources. Its wealth and prosperity can only be kept relatively high by superior intelligence, and to this end it cannot afford to have anything but the best in the field of technical education. Such schools as the Institute are obliged to pay increasingly high salaries, not only because of the rise in the cost of living, but because the richly endowed institutions of the West are calling some

of the members of the staff almost every month and tempting them to leave Boston.

Doctor Maclaurin declared that during the next fifteen years all Tech men are going to have reason to be mighty proud of the fact.

Theodore F. Tillinghast, '70, the oldest graduate, and one of the organizers of the New Bedford Club, spoke briefly regarding the work of Technology and of the enthusiasm of the local club.

Classes from '74 to '14 were represented, especially '74.

The committee in charge of the dinner were George H. Nye, chairman, Chauncy Whiton, '94, Charles R. Allen, '85, James A. Stetson, '99, and Charles F. Wing, Jr., '99.

Perkins and his Mancarrying Kites

S. F. Perkins, '09, made some very remarkable demonstrations of the effectiveness of his man-carrying kites at the Los Angeles aviation meet held last month. Some years ago he conceived of the possibility of building kites that would lift a man high enough to make reconnoissance in time of war, and although somewhat handicapped for means to properly carry on this work, he hit upon a plan of making the research pay for itself. He secured the contract for advertising a number of concerns by means of kites until it is now a business by itself. He has developed his man-carrying kites until he makes ascensions of over 350 feet. At the Los Angeles meet a one-wire aërial with a wireless outfit was carried aloft and proved a successful medium for receiving and sending wireless messages. It was a revelation to the officials to know how easily and quickly an emergency wireless station could be established in time of war.

Perkins' whole aim is to demonstrate the feasibility of his scheme to the War Department and secure its adoption by the government.

His first experience along these lines was received at the Blue Hill Meteorological Observatory, where he worked under Professor Rotch and Mr. Clayton. Later on he was assistant to Capt. Thomas S. Baldwin when the latter sold the United States government its first dirigible balloon. He was aid to Lieut. Gericke of the German balloon, Dusseldorf II, in the 1910 international balloon race,

Perkins, '09, carried by Kites 350 feet in the air

traveling a distance of 1,250 miles in 43 hours, and thus breaking the world's record until it was discovered that Messrs. Holly and Post had traveled some 150 miles further in the same competition. It is understood that arrangements have been made with Mr. Perkins to give exhibitions of his man-carrying kites at the coming coronation of King George of England.

DR. MACLAURIN ON TECHNOLOGY EFFICIENCY

Speech at the Annual Alumni Banquet in Boston—The Site "Problem" a passing issue

We are told that the keynote of our discussion tonight is to be *efficiency*. It is a theme entirely appropriate to the place and to the time. As to place, we represent the Institute of Technology and no single word could better describe what it stands for than this word—efficiency. All the talk we hear today about efficiency, in so far as it is sane, is nothing more than an emphasis of the importance of the scientific method in modern business. Think for a moment of the essentials of that method. Are they not these?—a careful investigation of *facts* (here some of our efficiency engineers go astray), an analysis of the problem that reduces it to its simplest elements, an attack on these elements under the guidance of a few illuminating principles. To produce such a habit of thought and to encourage the application of such a method to *all* practical problems is the great end of all our efforts at Technology. The measure of our success here—and nothing else—is the gauge of our efficiency as an educational machine. A discussion of efficiency, then, is eminently appropriate at such a gathering of Tech men. And if the place be fitting, the time is certainly opportune. In saying this I do not refer to the fact that at this time other people are talking much about efficiency. That might be a good reason for keeping quiet, for as a nation I fear we talk too much. It seems, however, that our discussion of efficiency tonight will form a natural prelude to the great celebration of the 10th and 11th of April next in honor of the fiftieth anniversary of the granting of our charter. It is felt that that is an event of far more than local interest, indeed that it is something of national importance. It is felt that this is so not merely because Tech is far more than a Boston institution—proud as Boston ought to be and is of its prestige; that this is so not merely because the Institute draws men from every state in the Union and from about fifty foreign lands, so that for its size it is perhaps the most cosmopolitan educational institution in the world; not merely for such reasons—but because the spread of the scientific method into the domain of business is a *world* movement that men of light and leading in every quarter of the globe are doing their utmost to advance. The race is for the swift and the battle is for the strong, and more and more in the business of the future will men and nations be strong and swift because of their use of the scientific method. It seems well, then, that we should celebrate the foundation of this Institute—an epoch making event in the history of the country—by getting men of eminence from all parts of the Union to demonstrate some of the great results that have already been achieved and to indicate the greater things that may reasonably be expected in the future when business clasps the hand of science with mutual understanding and respect. Such a celebration of our fiftieth anniversary, marked as it doubtless will be by the loyal and enthusiastic support of the alumni, will make this year a memorable one in our annals.

This, however, is not the only event that should make this year remarkable. For long it has been recognized that the Institute is hampered by its cramped condition, and that as it grows, as inevitably it must, its efficiency may be greatly impaired unless it can expand with reasonable freedom. Hence the problem of a new site has been talked of almost *ad nauseam*. I have little to say about this problem at this juncture except that I have some ground for the hope that as far as your annual banquets are concerned, these are the last words that you will ever hear from a President of the Institute with reference to the site. In

future presidential reports the chapter headed site problem will read—"There is no site problem at this Institute."—Such at least is my expectation.

Of the many other events that may make this year a veritable *annus mirabilis* I have time to mention only one. This is the campaign for increased state aid. It is a campaign that must be primarily one of education, and its success must depend very largely on the efforts of the alumni. Do not take it for granted that other people know all about the Institute and do not be content with mere enthusiastic talk about its merits—helpful as such talk may be. Be posted with *facts*, be ready to give a reason for the faith that is in you, and above all be prepared to answer every objection that can possibly be raised by those who, very properly, keep a watchful eye on the expenditure of public funds. It would be out of place for me to discuss the merits of our case on this occasion, but I feel that I ought not to let this opportunity pass of urging you to take an active interest in its progress. If you want a revelation of efficiency—a practical demonstration which will be far more impressive than any speeches—I advise you to get in touch with the Alumni Committee that has this campaign of education in hand. You will see there what the Tech spirit really means—you cannot but be impressed by the thoroughness of its methods, the tireless energy, the persistent application to the problem in hand, and the splendid self sacrifice and quiet enthusiasm that underlies it all A member of this committee, a busy and successful man of affairs in this city, told me yesterday—only partly in jest—that he was closing his office now. I know you will see that it is not fair to let all the load fall on one or two. Let *all* take a share.

Just one point more—do not give any color to the absurd suggestion that the Institute is in a critical position, in the sense that it is on the verge of collapse. An institution with its history and rendering its services to the community simply can not fall. It is earthquake-proof, and not even Professor Jaggar's prescience can see any signs of a quake that can move it. It has practically all that is vitally important in its favor—exuberant energy, traditions of the best kind, and the self-confidence that comes from *proved* success. Its weakness is on the financial side, but even here it owes no man anything and has millions of assets. The one thing that it needs just now is more capital, just as many a flourishing business does. Its troubles are due to the high cost of living in the domain of education and especially in that of technical education of the highest sort. We hear much in these days of the high cost of living in this country. It has entered into the very marrow of our politics and if indeed it be true that by any political action we can live as well at less cost, then of course let us do so. I would have you observe, however, that it is not seriously suggested that we should overcome our difficulties by reverting to the habits of the poorer parts of Europe and reduce the cost of living by a dietary of macaroni or potatoes only. A starvation policy does not really pay and if it does not pay in the household, it does not pay in the school. And it is peculiarly true that in the field of technical education nothing but the best is good enough for Massachusetts. Here we have no great advantages of climate, or soil, or great forests, or mineral wealth or conditions of labor. We can keep in the front commercially and industrially only by superior intelligence. Our salvation must come through *efficiency* and efficiency through training. Most of that training must be given at the Institute of Technology, and all that the Institute asks is that it be put in a position to go on giving to this state *the best that there is.* The ten thousand Tech men scattered throughout the Union are ten thousand arguments in support of such a policy, and through their loyal and enthusiastic efforts in this campaign of education there should be no thought of anything but *success.*

The Institute has the most effective alumni organization in the world.

FOR INDUSTRIAL HARMONY

George W. Perkins declares that the Keynote is Capital–Labor co-operation in address at Alumni banquet

Efficiency in business, to the average mind, has stood for economy in production, effectiveness in selling, and shrewdness in administration; but with the rapidly changing conditions of our time, efficiency that is real, that is enduring, must hereafter stand for something broader than this. It must stand not only for close business management, the saving of the waste, and a keen insight into business conditions and tendencies throughout the world, but as well for a broad spirit of coöperation, a lively regard for public opinion and, above all, an honest, open and square method of business dealing.

The world has moved very fast in the last quarter of a century. Great discoveries, great inventions, have made possible, have compelled, the adoption of new methods in business, and these have crowded upon one another with such rapidity that it is scarcely a matter of wonder that there has been lacking the amount of thought necessary to properly analyze the causes that have brought about the business conditions existing in our country today.

The changes in business methods in the United States, within the lifetime of nearly every man in this room, have amounted almost to a business revolution. Scarcely any line of business is conducted today, or could be conducted today, along the same lines that it was twenty-five years ago. One would think, from much of the talk indulged in during recent years that the great corporations of today, for example, have been created solely to serve the purposes of a comparatively few men; that they could just as well have been created at any other time in the world's history if the same type of men had ever before, existed. Nothing is more fallacious. Doubtless selfish men have taken improper advantage here and there of the new conditions brought about through the inventions and discoveries of the age, but these men could not have begun to do what they have done had it not been for these same inventions and discoveries,—inventions which, in themselves, have been acclaimed and applauded as great achievements. We could have no large business concerns and we should therefore have none of the troubles that beset us today as the result of these concerns, if, with one sweep of the hand, certain inventions and discoveries of our times could be wiped out of existence and we could be put back into the condition of lack of inter-communication under which business was conducted by our forefathers. It is the ocean greyhound, the 20th Century Limited, the telegraph, the long distance telephone, the wireless, that have brought us where we are. The inventors of these methods of intercommunication are the men who are primarily responsible for our problems of today. One of the first requisites for doing business is the ability to communicate with people. In the olden days of transportation of thought and commodity the merchant could only communicate with a very small number of people; therefore, he could do only a small business and he needed only a small organization and a small capital. Today any man in any line of business can communicate with any number of people he desires. With electricity he can flash his offer to sell around the world. Every man in any given line of business, no matter where he is located, has but to have the desire to offer his wares for sale anywhere and he can do it. Whether or not he can do it successfully, profitably, either to him-

self or the labor he employs, or to the advantage of the community he desires to enter, may be another question, but he can at least attempt it, for inter-communication throughout the civilized world is now complete.

This is a condition, not a theory. What are we going to do about it? What are we going to do with it? It is the problem of the day, and this problem affects one and all,—capital, labor, the public, the government. On its solution depends not only the prosperity of the men and women of today, but those of tomorrow.

At the present moment the executive branch of our government is bending every effort to accomplish the construction of the Panama Canal, and we are filled with pride at the prospect that this new channel of commerce opens up to us. If this canal means anything it means the placing of the United States in the very center of the path of commerce in the future. While the executive branch is engaged in this splendid undertaking we are waiting with bated breath for the supreme court of our country to decide, in effect, whether we shall, as a country, do business on a wholesale or retail plan, and our Congress refuses to put a single ship of commerce on the seas.

We are not agreed, and a house divided against itself is bound to fall. Until we adjust our own differences and decide what are to be our business standards, our business methods, we cannot hope for that efficiency and that material prosperity to which the natural resources of our country entitle us; and it is just as important to our foreign trade relations as it is to our domestic trade relations that we settle with all possible dispatch the question of how the United States is going to do business. We must at least have certainty.

Normal conditions now are vastly different from normal conditions in the past. When a man can sit at his desk in Boston and talk to a man who is at his desk in Chicago, and close a business transaction without either man leaving his chair, each recognizing the other's voice, what matters it that there are three or four states separating their bodies? Their minds have met more quickly than could have been the case had they been in adjoining buildings twenty-five years ago. Electricity has emancipated the mind from the body and given it wings. It is the mind, not the body, that does business. Think of it! By placing a wire to one's ear the mind, through the voice, can fly to a distant city, do business there and return, and immediately go off to another city, do business there and return, and do this as many times in a day as occasion requires.

These marvelous changes apply to all phases of life. The farmer, only a few years ago, was isolated on his farm. He raised his produce and hauled it to the nearest town without knowing, when he left his farm, what he could get for it, being more or less at the mercy of the storekeeper when he reached his market. Now the free rural delivery brings him his daily paper, containing all the market quotations at home and abroad. In place of killing a dozen chickens, taking them to town by team, asking the storekeeper to buy them, and being forced to accept what the storekeeper is willing to give, he stays at home until the storekeeper calls him up by telephone and asks if he will do the storekeeper the favor of selling him a dozen chickens; and the farmer knows what price he is going to get before he kills. Having killed the chickens, he whisks them into town on a trolley car or in an automobile —thus saving, first, a long journey with a team; second, offering his articles around town and taking whatever price for them he can get, and, third, considerable time for work on the farm. How greatly has electricity enhanced the efficiency of the farmer.

What a complete change, what an absolute reversal of the order of things in a handful of years! The attempt by humans to make laws that will nullify conditions that have come about through the conquest of the mysteries of nature will never succeed. One might just as well attempt to legislate against lightning.

If this country does not want business done with the instruments that inventors and discoverers have placed in the hands of business men, then eradicate the causes, not the results. Begin by electrocuting Edison and Marconi; apprehend the Wright brothers and put them behind the bars.

A few years ago, largely owing to new instruments for the conduct of business, a commercial war was raging the like of which was never before known in business affairs. In war it is not the long-range fighting that costs so dearly in human life; it is the struggle in the trenches. When the armies are fighting at long range no one can tell when the battle will be over, nor who will win, nor what the loss of life will be; but as the armies draw closer and closer together, the battle becomes fiercer, the destruction more deadly. When the men finally enter the trenches, the destruction is frightful and the end is near. When business men in New York were competing with business men in Chicago, in the days of the stage-coach, competition between the two cities did not do so much harm; but with the advent of the fast trains, the telegraph and the telephone, they got into each other's trenches, and the competition was indeed deadly. This is what was happening in business in the United States, largely owing to the agencies of steam and electricity, which have annihilated distance and made the world so small.

Some of us, believing that some substitute must be found for the ruthless competition that is so deadly in close-range fighting in business, have been endeavoring to build a bridge from old methods to new, from barbarous competition to humane coöperation. Whether or not we shall succeed and the structure will safely carry, only time can tell. The structure may break, through faulty construction, or because vandals cut some of the strands. In either case many would be precipitated into the raging torrents: but, assuming the continuance in use of the instruments with which business is now being conducted, of one thing we can be certain,—the world must, the world will, get across such a bridge, by peaceable and safe methods maybe, but in any event and at all hazards it will get across. For how can we applaud the constant flooding of the world with inventions and devices for drawing it closer and closer together in business and social relations, and at the same time condemn the movement to get away from ruthless competition and adopt more coöperative methods?

Competition under present methods of life is too destructive to be tolerated. Coöperation must become the order of the day. It is the only method that will provide an efficiency such as will answer future conditions of life and the nation that first recognizes this and works out the problem will be the nation to lead in the future. Many of us,—yes, nearly all of us, who are now in middle life, were brought up to believe the old adage that "competition is the life of trade." Competition in the long ago doubtless did stimulate trade but it was almost always to the serious misfortune of one or more individuals. A highly developed competitive system gave ruinously low prices at one time and unwarrantedly high prices at another time. When the low prices prevailed labor was sorely hurt; when the high prices prevailed the public paid the bills. Competition is much like the robbing of Peter to pay Paul; what one gains the other loses. Insofar as competition represents the survival of the fittest, it very often means the survival of the strongest; in other words, that "Might makes right." In this day of close inter-communication, methods that are harmful and practices that are injurious injure many more people than they did long ago.

This past fall the American Iron and Steel Institute invited representatives of the iron and steel institutes of Europe to come here as its guests. Over twenty-five of such representatives came, and a number of days were spent in conferences in this country. The question of competition versus coöperation throughout the world was dwelt on at great length by representatives from all nations.

Toward the close of the meetings the suggestion was made that an international institute be organized, and as this met with favor another suggestion was made that a seal or emblem of some sort be designed that could be used by the international institute. Several designs were submitted. Finally one was offered that showed in the center of the sketch a number of swords and bayonets thrust into the ground and others being made into ploughshares. At the top were the words "Right is might" and at the bottom was the one word "Coöperation." It was surprising to see how quickly this emblem appealed to every man, no matter from what country; and it was clearly because each man, being a leader in his industry in his own country, had become keenly alive to the fact that by the use of the cable, the telephone and the fast ships, he either had to fight fast and furiously and at great risk all over the world, or he had to do business on a "live and let live" basis. Only a few years ago if these same men had met, it is safe to say that many of them, if asked for a design for a seal for an international steel association, would have said that the wording should be, "Might is right; Competition."

But if we are to have coöperation in place of competition we can only have the sort that is real, that permeates everywhere; coöperation between manager and stockholders, between manager and labor, between manager and public, between manager and government. Cooperation that gives better opportunities to managers to enrich themselves and does nothing more will no longer endure. Coöperation that increases profits to stockholders but does not improve the condition of labor cannot endure. Cooperation that means substantial benefits to stockholders and labor, but ignores the rights of the public, will ultimately fail. This is so because the masses have been taught to think. In our country the state and wealthy individuals have vied with one another in spending money to educate the masses, to teach them to think. Having done this, we must expect to answer the questions that such teachings naturally prompt. You cannot spend a million dollars on the education of one generation without having a million questions raised by the next generation.

As a result of the educational process that has been going on, one of the questions raised by the present generation is "What is the proper division of profits as between capital and labor?" This question is being mistaken in many quarters for a demand for higher wages; but the question can never be answered by a mere increase in wages or even by frequent increases in wages. The increasing intelligence of the people, which the state and men of wealth have brought about through their contributions for educational purposes, has raised the question, not as to the amount a man is paid for his services, but as to whether or not the amount he is paid, be it little or much, is his fair proportion of what is made in the business of which he is a part, We see many instances in life where manual labor is performed by people for small pay, and yet willingly performed because they know that what they are paid is all that the calling can rightfully stand.

When labor is in serious doubt or is practically certain that it is not getting its fair proportion, an increase in wage is too much like a bribe and, in many cases simply arouses suspicion and thus adds fuel to the flame. If we are going to get away from ruinous competition to a coöperative or "live and let live" basis, we must coöperate all along the line, and to coöperate between capital and labor there must be a show-down as to what the business is doing; there must be publicity and frankness, to the end that the labor part of the concern may know what the capital is doing and making; and my expericence has been that this, in place of being a dangerous policy for a concern to adopt, is the only safe policy, and that, once adopted, adopted honestly and sincerely, it goes far toward adjusting many differences that have arisen.

The day of the secretive method, of getting away with improper profits, is

gone; but this does not mean that the day of substantial profit to capital is gone. Broadly speaking, I have come to believe that the following principle should be adopted in the organization of American business concerns, viz.: The organization of men managing any given business, including all workers, should be paid their salaries and wages for rendering service of a kind that would earn the amount of money necessary to keep the business rehabilitated, to pay interest on any bonded debt there might be, and dividends on preferred shares of stock, when conservatively issued. If this organization of men, brain workers and hand workers together, should develop so high a type of efficiency that their efforts produce more profits for the concern than is necessary for these purposes, such profits would naturally go to the common stockholders; and at this point the organization of men who carry on the business should share with the common stockholders this extra profit earned; and the basis of this sharing should be with regard to the original cash value of the common stock when the company was organized, the nature of the service performed, the difficulties involved in the business venture, length of service, etc. Broadly speaking, this basis of profit sharing would have enormous advantages all around. The very fact that the organization was employed under such a contract by the stockholders would furnish to the bondholders of such a company the strongest possible probability of receiving the interest regularly on their bonds, since the organization would constantly have as its goal the object of earning something on the common stock, and this in itself would make it quite certain that the interest on the bonds would be earned, if such a thing were at all possible.

Men worthy to be called men, in whatever calling they may be, do not want something for nothing. The gratuity at the end of the year, the Christmas present, when it comes more or less unexpectedly and as a gift, does not give real satisfaction to the mind of the worker. He is apt to feel that it is but a small fraction of what is justly due him, and so it serves the opposite purpose of that intended,— it embitters his feeling instead of strengthening his loyalty. Besides, money received in this way is too often spent for some transient pleasure; it is seldom saved. A definite statement at the beginning of a year to a body of men engaged in any given business, as to what is expected of them during that year, coupled with the promise that if certain results are accomplished each man will have a share in that accomplishment in proportion, as nearly as possible, to what he has contributed, sets a goal that can be intelligently striven for. If success attends such coöperative effort and profits are earned, the men understand how they were earned and they rejoice, not only in the larger income they receive, but as well in having achieved success. And where is the man, whatever his sphere of life, who does not enjoy the tingle that comes with success?

So far as possible, the extra compensation earned under these conditions should not be distributed in cash, but in stock, or, if the business be a small one, in a certificate of interest of some kind that keeps the man's profits invested in the business in which he is engaged. This accomplishes two very important things: First, it gives the man a direct and pecuniary interest in the business and convinces him that he is a partner in fact; and there are a thousand and one ways in which he will become more efficient to the business because of this feeling. Second, it induces him to save, in place of spending this extra compensation on something unnecessary, or of using it to increase the cost of his living, or of putting it into some outside investment that will probably cause him worry and distract his attention from his business. Nothing so tends to increase efficiency in an organization of men as the stimulating of a real, lively interest on the part of each individual in his daily task.

Profit sharing that is real, that is practical, is far from bonus giving. Profit sharing should not only give better and

more equitable compensation but should teach, foster and provide a means for saving. A constantly increasing wage scale means a constantly increasing living scale and a larger purchasing power for commodities, which means higher prices for such commodities. Profit sharing should mean profit saving, and this accomplished would mean many men having many dollars saved and to their credit in place of three or four men in the same business having many dollars to their credit. Accumulated wealth is an absolute necessity for the development and welfare of any nation, but it can be had just as well in groups as in units.

Our large business corporations have been popularly described as trusts, and in one sense of the word the term is more aptly applied to them than many of us have in the past taken thought to realize. They are organizations to which, on the one hand, the public has entrusted its money and to which, on the other hand, labor has entrusted its welfare; and the managers of great corporations, therefore, assume in a very real sense a trusteeship in respect to the public at large,—both the public which invests its money and the public which is employed as labor. It is largely because the managers of corporations have, in many instances, failed to appreciate that they are indeed trustees and have often acted as they would had they been partners in a firm, that we are today confronted with the corporation problem as it is generally viewed, and that some corporations are regarded with ill favor in quarters where they should be regarded with approval.

I believe that of late there has been a development of the business conscience,—a growing appreciation on the part of corporation managers of their trusteeship; and when the giant corporation stands for public coöperation, and each of the elements of which the corporation is made up realizes what it owes as a duty to the others, we shall be far on the road to a solution of our problem. The duty of a corporation to its stockholders is no more sacred than its duty to its employees, and to neither is its duty more sacred than to the public at large. The inevitable conclusion from this view is that corporations should rightfully be subjected to governmental supervision. I, for one, firmly believe in federal regulation and that publicity should be the main stem in the system of governmental supervision. Enforce rigid and thorough publicity and the evils of corporation management will largely disappear; for evils, once fully known, cannot persist in the face of public sentiment. In an address I delivered at Columbia College about three years ago, I dwelt at length on this phase of our corporation problems.

A large percentage of the mistakes of corporate management have occurred because managers have failed to realize that they were not in business as individuals, but were working for other people, whom they were in honor bound to honestly and faithfully serve; and further that they owed a duty to the general public and, in the long run, could best serve themselves and their stockholders by recognizing that duty and respecting it.

It is not sufficient in corporate management to do the best one can from day to day. Corporate responsibility extends beyond today. It is the foresight, the planning ahead, the putting the house in order for the storms of the future, that are the true measure not only of the best and highest stewardship, but as truly of the highest order of managerial ability itself.

We can back and fill, we can talk and scold, we can threaten and abuse and prophesy dire things, yet there will be but one ultimate result, viz., progress and growth. We can delay the onward movement for a time, we can make it very costly, but nevertheless the movement will be onward and coöperation will follow competition just as surely as the electric light followed the tallow candle.

In the very beginning the universe was organized, and all that man has done in society, in the church, and is now trying to do in business, and all that he can do in the centuries to come, can never bring to pass so complete a form of organization, so vast a trust, so centralized a form of control as passes before our eyes each

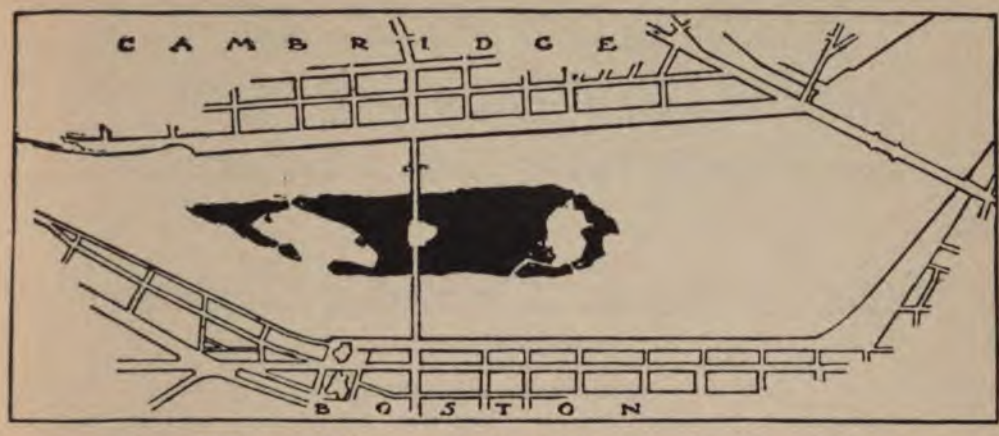
twenty-four hours of our lives as we contemplate that all-including system of organization called the universe. It does not require a very vivid imagination to picture the waste, the destruction, the chaos that would follow if there were not perfect organization, perfect coöperation, perfect regulation, perfect control in the affairs of the universe. How should we get on, for example, if there were incessant competition between day and night, or a constant struggle for supremacy between the seasons? Does any one for a moment think that he would prefer such a condition to the coöperation that now exists through all the affairs of the universe? Organization, coöperation, regulation, control, being the all-permeating principles of the universe, the presumption is in favor of them wherever we find them or the possibility of their coming into play.

The foundations of our nation were laid here in New England,—not by professional politicians but by men of affairs who considered it an honor and a privilege to perform public service. The foundations they laid remain sound and good, but the superstructures, political and industrial, which have been built upon the foundations, like the early railways, have followed the line of least resistance. They answered the convenience and, to a great extent, the needs of a past generation; but they have become unsuited to the changed conditions of today. Evolution and education going hand in hand have wrought the great change. The wastefulness and the glaring abuses of long-accustomed methods in politics and business have become intolerable. Regrading and rebuilding has become a necessity. There must be a straightening of the ways, a releveling of the rough places. The process thus far has been unpleasant, disturbing, costly, perhaps dangerous; but it is not only necessary,—it is inevitable,—a process of life which is bound to push forward. And its result will be good or bad, a bane or a blessing, not altogether according to the guidance and leadership which it receives but mainly according to the character of the life that is in the nation; for in this land of ours the people are the legitimate rulers. Moreover, in every emergency the people make their power felt; they assume responsibilities; they are assuming new responsibilities now; you can feel it in the air; and the result of the reconstruction now beginning will be, not as individuals or classes might wish it to be, but such as will really represent the collective mind of the whole people.

My contact with many different classes of people in many different walks of life has convinced me that there never was a time in the history of our country when the solution of great problems could be so safely left to the people, provided the problems are fairly and fully presented. The danger lies in lack of information, lack of discussion, lack of disinterested leaders who are thoroughly informed and who have the courage of their convictions. Our problems being of the most practical sort cannot be successfully solved by theorists or politicians. What we must now have is constructive work,—work by men who know what the problems are and who are patriotic enough to give their time and their talents to working them out for the best and ultimate good of one and all.

The men in this room are typical representatives of their respective communities. Each one of you owes it to himself, to his kin, to his country, to follow the examples of his forefathers by giving to public questions a certain proportion of his earnest thought and action. At no time since the War of the Rebellion has such service as this been more necessary, and on the quality and quantity of it here, there and everywhere throughout our land will depend beyond question the right solution of our present problem and the future prosperity and happiness of our people.

Springfield's offer to raise three millions if the Massachusetts Institute of Technology can be moved there shows a progressive spirit and enterprise which we question if any other city in the state could equal.—*Malden News.*



Proposed Island for Technology in the Charles River, crossed by Harvard Bridge

To Build an Island in the Charles for Tech

Since the question of a new site has been agitated in the newspapers many interesting suggestions have been made.

One of special importance was from the Board of Metropolitan Improvements that the Institute should be located on an island in the Charles River.

The proposed island scheme has been discussed privately for some months and was favored by some prominent engineers. The Institute would simply have to build retaining walls and the elevated road would dump the material from the new subway there. Dr. Maclaurin thought that the merits of the island scheme should be discussed entirely apart from its connection with the Institute of Technology as there might be very serious opposition to the project. He said that when the citizens determined that an island was desirable it would be time to consider it seriously as a location for the Institute.

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The Technology Review

VOL. XIII MARCH, 1911 No. 3

THE COMING CONGRESS OF TECHNOLOGY

It will mark the 50th Anniversary of the granting of the Charter to the Institute—Anniversary Smoker and Banquet to be given

The Congress of Technology which will be held at the Institute, Monday and Tuesday, April 10th and 11th, will be the most important event in the history of the Institute since its foundation because it will surely mark the beginning of a new era of prosperity and of achievement. The event will partake of professional, social and public features and the notable papers to be presented will constitute a unique record of the practical achievements of science in modern life. The meetings of the Congress will be open to the public and arrangements are being made to care for the large numbers that will be in attendance from New England as well as from the entire country.

The occasion marks the fiftieth anniversary of the granting of the Institute's charter. During these fifty years, the world has seen the fruition of President Rogers' plans, for the "advancement, development, and practical application of science in connection with arts, agriculture, manufacture and commerce," which the Institute was organized to promote.

The social features of the anniversary have been delegated to an alumni committee which has arranged for an anniversary smoker in Symphony Hall on April 10th. This will probably be the largest affair of the kind ever held in New England. The Waltham Watch Company Band of thirty pieces will furnish music and specialties of an unusual character will be presented at intervals during the evening. The moving pictures of the Technology Reunion of 1909 will be thrown on the screen and a special committee is at work on lantern slides of amusing episodes during the history of the Institute taken largely from Techniques.

Application for tickets will be made in the usual way on blanks to be sent out within a few days. With the regular ticket application there will be a blank for ladies' tickets to the balcony.

The Association of Class Secretaries is actively engaged in arranging for class suppers of all the classes on Monday, April 10th. Most of the classes will, no doubt, be glad to have their regular meeting at that time. Others who prefer to have a class meeting at a time when the whole evening can be devoted to it, will

meet informally or arrange to dine in a public dining room of some hotel and go to Symphony Hall later. The hall will be open at 7.30 and the fun will begin about 8. It is expected that 1,000 Tech men will be on the floor.

On Tuesday evening, April 11th, an anniversary subscription banquet will be given at Symphony Hall to which alumni and prominent citizens of New England are invited. The banquet will be arranged on a magnificent scale and will be somewhat similar to the reunion banquet, of 1909. The speakers will be men of national reputation more or less directly connected with the development of industry. Invitations to this banquet will be sent out within a short time with application blanks. It is believed that some very interesting announcements will be made during this banquet.

The first session of the Congress of Technology will be held in Huntington Hall, Monday, April 10th, at two o'clock. President Maclaurin will open the exercises with an address and he will be followed by prominent speakers who have been invited to prepare papers for the Congress. April 11th will be the second day of the Congress and will be continued in Huntington Hall. The papers themselves will mark the advance skirmish line in science and technology and will reflect rather than recount the victory of technical education which was conceived by William B. Rogers.

Half a century ago there were many forces at work to impress on far-seeing men the necessity of radical changes in education in order that the country might profit as it should by the discoveries of science and by the application of its method and spirit to the great practical problems of the day. Following the plan laid down for it the Institute has trained a great number of men who are now in the very front rank of science, men who have extended far the boundaries of knowledge and thereby gained a world-wide fame. In addition to this its former students are to be found in positions of power and responsibility in every state of the Union, engaged in the work of developing mines, opening up the country by means of railroads, applying scientific methods to the great problems of transportation, power production and distribution, advancing chemical industries, conserving the public health, and contributing in countless other ways to the increase of the nation's wealth.

This practical application of science to the affairs of life will be surveyed and described, as also the conditions and problems of groups of allied industries, in a large number of papers by alumni and members of the faculty of the Institute. The record of the proceedings of the Congress, will furnish an epitome of what has been done by the application of technical science to the world's business.

The papers to be presented at the Congress of Technology are as follows:

Landscape Architecture,—Stephen Child, '88, Landscape Architect and Consulting Engineer, Boston.

Some Phases of Modern Architectural Practice,—Walter H. Kilham, '89, of Kilham & Hopkins, Architects, Boston.

The Engineer and Architect Unite,—Luzerne S. Cowles, '97,—Asst. Designing Engineer, Boston Elevated Railway Co., Boston.

The Improvements in Efficiency of Electric Lighting Properties and What the Public Gains Through These Improvements,—William H. Blood, Jr., '88, Engineer with Stone & Webster, Boston.

Instruction in Finance, Accounting and Business Administration in Schools of Technology,—Harvey S. Chase, '83, of Harvey S. Chase & Company, Certified Public Accountants, Boston.

Commercial Development,—Charles Hayden, '90, of Hayden, Stone & Company, Bankers, Boston.

The New Profession of Economic Engineering,—Roger W. Babson, '98, "Babson's Reports," Wellesley Hills, Mass.

Prevention and Control of Fires Through Scientific Methods,—Edward V. French, '89, Vice-President and Engineer, Arkwright Mutual Fire Insurance Company, Boston.

Reclamation of the Arid West,—Fred-

erick H. Newell, '85, Director of the Reclamation Service, Washington, D. C.

Research as a Financial Asset,—Willis R. Whitney, '90, Director of the Research Laboratory of the General Electric Company, Schenectady, N. Y.

The Spirit of Alchemy in Modern Industry,—Professor William H. Walker, Director of the Research Laboratory of Applied Chemistry, M. I. T.

The Responsibility of Manufacturers for the Training of Skilled Mechanics and Shop-Foremen,—Prof. Arthur L. Williston, '89, Director, Wentworth Institute, Boston.

Training of Industrial Foremen,—Prof. Charles F. Park, '92, Director, Lowell School for Industrial Foremen, M. I. T.

The Technics of Iron and Steel,—Theodore W. Robinson, '84, Vice-President Illinois Steel Co., Chicago, Ill.

The Industrial Need for the Exceptional Man,—Odin B. Roberts, '88, Lawyer, Boston.

Education—Its Function in Training for the Textile Industry,—Charles H. Eames, '97, Director, Lowell Textile School, Lowell, Mass.

Development of Mining Schools,—Prof. Robert H. Richards, '68, in charge of the Department of Mining Engineering, M. I. T.

Technical Education and the Contracting Engineer,—Sumner B. Ely, '92, Vice-President, Chester B. Albree Iron Works Company, Allegheny, Pa.

The Technical School Graduate; His Strength and His Weakness,—Prof. H. P. Talbot, '85, in charge of the Department of Chemistry and Chemical Engineering, M. I. T.

The General Educational Value of the Study of Applied Science,—Alan A. Claflin, '94, President, Avery Chemical Company, Boston.

The Influence of the Institute Upon the Development of Modern Education, James P. Munroe, '82, Executive Director Boston 1915, Boston.

The Elevation of Applied Science to an Equal Rank with the so-called Learned Professions,—Mrs. Ellen H. Richards, '73, Instructor in Sanitary Chemistry, M. I. T.

Factory Sanitation and Efficiency,—Prof. C.-E. A. Winslow, '98, Associate Professor of Biology of the College of the City of New York, and Curator of Public Health in the American Museum of Natural History, New York City.

The Pollution of Streams by Manufacturing Wastes,—William S. Johnson, '89, Sanitary and Hydraulic Engineer, Boston.

Sewage Disposal with Respect to Offensive Odors,—George W. Fuller, '90, of Hering & Fuller, Hydraulic and Sanitary Engineers, New York City.

Present Status of Water Purification in the United States and the part that the Massachusetts Institute of Technology Has Played,—George C. Whipple, '89, of Hazen & Whipple, Consulting Engineers, New York City.

Profitable and Fruitless Lines of Endeavor in Public Health Work,—Prof. Edwin O. Jordan, '88, Professor of Bacteriology, University of Chicago, Ill.

The Technical School Man in Public Health Work,—Harry W. Clark, '88, Chief Chemist, Massachusetts State Board of Health, Boston.

The Life Saving Corps of the Technical School,—Prof. Severance Burrage, '92, Professor of Sanitary Science, Purdue University, Lafayette, Ind.

Reliability of Materials, Walter C. Fish, '87, Manager General Electric Works, Lynn, Mass.

The Chemist in the Service of the Railroad,—H. E. Smith, '87, Chemist and Engineer of Tests, Lake Shore and Michigan Southern Railway, Collinwood, Ohio.

Scientific Industrial Operation,—Tracy Lyon, '85, Assistant to First Vice-President, Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa.

The Natural Increase in the Ratio of Burden to Labor in Modern Manufacturing Processes,—James B. Stanwood, '75, Engineer and Vice-President, Houston, Stanwood & Gamble Co., Cincinnati, Ohio.

Scientific Management, David Van Alstyne, '86, Vice-President, Allis-Chalmers Company, Milwaukee, Wis.

An Object Lesson in Efficiency,—Wilfred Lewis, '75, President, The Tabor Manufacturing Company, Philadelphia, Pa.

The Scientific Thought as Applied to Railroad Problems,—Benjamin S. Hinckley, '99, Engineer of Tests, N. Y., N. H. & H. R. R., New Haven, Conn.

The Field of Scientific Management in Railroad Work,—Samuel M. Felton, '73, President, Chicago Great Western R. R., Chicago.

The Development of Economical Ore Dressing Systems,—Frank E. Shepard, '87, President, Denver Engineering Works, Denver, Colorado.

Metallography and Its Industrial Importance,—Prof. Albert Sauveur, '89, Professor of Metallurgy and Metallography, Harvard College, Cambridge.

The Conservation of our Metal Resources,—Albert E. Greene, '07, Electro-Metallurgist with the American Electric Smelting and Engineering Company, Chicago, Ill.

An Electric Furnace for Zinc Smelting,—Francis A. J. FitzGerald, '95, Consulting Engineer, Niagara Falls, N. Y.

Some Causes of Failures in Metals,—Prof. Henry Fay, Professor of Chemistry, M. I. T.

Analysis of Some Losses of Efficiency in a Large Producer-Gas Engine Plant, John G. Callan, '96, Engineer with A. D. Little, Inc., Boston.

Coal Combustion Recorders,—Prof. A. H. Gill, '84, Professor of Technical Analysis, M. I. T.

Thirty Years' Work in Boiler Testing,—George H. Barrus, '74, Expert and Engineer, Boston.

Mechanical Handling of Materials,—Richard Devens, '88, Manager, Eastern Office of the Brown Hoisting Machinery Company, New York, N. Y.

The General Solution for Alternating Current Networks,—George A. Campbell, '91, Engineer, American Tel. & Tel. Company, New York City.

Mail Handling Machinery at the Pennsylvania Railroad Terminal and United States Post Office at New York City,—Julian E. Woodwell, '96, of L. B. Marks & J. E. Woodwell, Consulting Engineers, New York City.

The Development of a System of Underground Pneumatic Tubes for the Transportation of United States Mail,—B. C. Batcheller, '86, Chief Engineer, American Pneumatic Service Company, New York, N. Y.

The Control of Thermal Operations and The Bureau of Standards,—George K. Burgess, '96, Associate Physicist, Bureau of Standards, Washington, D.C.

Improvements in Cotton Bleaching,—Walter S. Williams, '95, Textile Expert, Arthur D. Little, Inc., Boston, Mass.

Power Plant Betterment,—H. H. Hunt, '89, Stone & Webster Management Association, Boston, Mass.

The Debt of the Manufacturer to the Chemist,—Hervey J. Skinner, '99, Vice-President, Arthur D. Little, Inc., Boston, Mass.

The Record of Technology

In an article published in the *Popular Science Monthly* a few years ago, Professor George F. Swain summarized the claims of the Institute to recognition as a leader in the development of technical education as follows:

"It was the first school in the world to institute laboratory instruction in physics and chemistry to students in large classes as a part of the regular course of each candidate for a degree; the first to equip a mining and metallurgical laboratory for the instruction of students by actual treatment of ores in large quantities; the first to establish a laboratory for teaching the nature and uses of steam, and a laboratory for testing the strength of materials of construction in commercial sizes; and the first in America to establish a department of architecture. Later still, it was the first school in America to establish distinct and specialized courses of study in electrical engineering, in sanitary engineering, in chemical engineering and in naval architecture."

WORKING FOR A STATE GRANT

Committee of Education and Senate Ways and Means favorable—Hearing before Joint Committee of Ways and Means

The Institute's bill for $100,000 a year was passed on favorably by the joint Committee on Education of the Legislature and was given a hearing before the joint Committee on Ways and Means, on February 28. The Senate Committee reported February 29 that the bill ought to pass and it will come up in the Senate for vote probably before the REVIEW is issued. It will then go to the House and be referred to the Ways and Means Committee. After this committee has reported, it will be finally voted on.

The hearing before the joint Ways and Means Committee of the Massachusetts Legislature took place February 28th. Those who appeared for the bill were Edwin S. Webster, '88, of Stone & Webster Corporation; President R. C. Maclaurin; Colonel T. L. Livermore of the Corporation; Francis R. Hart, '88, chairman of the board of directors of the Old Colony Trust Company, and former treasurer of the Institute; Harvey S. Chase, '83, of Harvey S. Chase & Company; B. Preston Clark of the Plymouth Cordage Company; J. Franklin McElwain president of the W. H. McElwain Company; Everett Morss, '85, president of the Simplex Electrical Company, and Edgar N. Wrightington, vice-president of the Consolidated Gas Company. No one appeared in opposition.

James W. Rollins, '78, chairman of the Committee on State Aid, conducted the case for the Institute.

Mr. Webster stated that ever since Stone & Webster started in business twenty years ago, they have been taking a number of graduates from the Institute each year, some years as many as twenty-five or thirty, and in his opinion, this has been one of the greatest sources of strength in the development of the business, not only along scientific lines, but along practical lines as well.

Dr. Maclaurin gave a brief résumé of the arguments made at the hearing before the Committee on Education and in response to questions from the committee made a statement in regard to the financial condition of the Institute and outlined the plans for future development. He pointed out that the great industrial advance in Germany during the last twenty-five years from a poor country to a rich one has been accomplished largely through technical research and showed that there was no reason why this community should not attack the business problem just the same as Germany has. He spoke especially of the laboratory of applied chemistry and the practical work it is accomplishing for the community as well as for the country at large. In one case a concern was throwing away a by-product which through the advice of the laboratory was utilized and a saving of $80,000 a year was made.

In regard to a query about the McKay will, Dr. Maclaurin made the following statement: It is not uncommonly supposed that the plan which was suggested some years ago by the terms of which the Institute was expected to derive some benefit from the McKay will was rejected by the Institute of Technology, and its trustees are blamed in certain quarters for having turned down what some people consider a good proposition.

Now, as a matter of fact, the Institute of Technology did not reject the plan at all. The only body that had any power to enter into such an agreement was the Corporation of the Institute, and on the only occasion when it expressed any opinion on this plan it approved it. In spite of this the plan fell through, because a judgment of the Supreme Court made it impracticable for the Institute to fulfill the conditions of the agreement. The case that the court decided (*Wilson*

v. *Massachusetts Institute of Technology*, 188 Mass., page 565) had reference to the restrictions on our Boylston Street property and the decision made it impossible to carry through the plan of coöperation with Harvard that would otherwise have been possible. I may add that even if the scheme had not miscarried, the Institute would not have been free from financial difficulties today. The benefit to be derived was mainly prospective, and the Institute's share of the present income from the McKay bequest would have been small. That is a matter that has beeen greatly misrepresented in current discussion of this question."

The President was followed by Colonel Livermore who made a condensed statement of the Institute's case as follows: At the present time the Institute has to depend largely for making up the deficit incurred in its current expenses on contributions from the community, from alumni and others. It has become apparent that the Institute in order to provide for the increasing number of students that are pressing upon it, and to provide enlarged and adequate facilities, must move to a new site. It is going to take all of its resources, and all that it can get contributed by its friends, to pay the expenses of moving and establishing a new plant.

It is hopeless to expect that the community during the ten years in which this new establishment is being built will contribute both the deficiency in current expense and the amount which must be raised to build the new plant. For that reason the Institute now asks the State for this contribution of a hundred thousand dollars a year for its current expenses, and for that reason only, so that its requests to its friends and the community and the alumni shall be addressed entirely to its wants for establishing the new plant.

If the bill does not explicitly confine the expenditure of this $100,000 a year to current expenses there is not the slightest objection to having any phraseology incorporated within the bill which will make it clear.

Now, the property of the Institute may be divided largely into two lots. There is the Boylston Street property on which it has two buildings opposite the Brunswick Hotel, and there is the property on Clarendon Street where its group of engineering buildings is situated; and outside of that it has some property on Garrison Street, and some exercising grounds in Brookline.

The Legislature has released to the Institute of Technology all its right in the land on Boylston Street, but the court has intervened and says that the abutters have rights which must be respected, and as long as they insist upon those rights it is impossible to sell the Boylston Street property for its value, or anywhere near its value. This, I understand, cannot be remedied by an act of the Legislature; the Legislature has given all it has a right to give in the most liberal manner; but the court says the abutters have rights which the Legislature cannot take away.

THE CHAIRMAN.—Do I understand you to say that by a further act of the Legislature that situation could not be remedied?

COLONEL LIVERMORE.—I understand it cannot be; I understand the effect of the decision of the court is that the Legislature cannot take away the rights of the abutters.

THE CHAIRMAN.—That is, under the police power of the Legislature am I to understand that the Legislature could not take away those privileges from the abutters—if it was for the best interest of the state?

COLONEL LIVERMORE.—I should be very reluctant to oppose my judgment to that of the chairman of the committee, or the committee on that point, but I understand that the Supreme Court has intimated that that is its opinion.

THE CHAIRMAN.—That is their opinion of the present act; do you understand the Supreme Court to make a forecast of the future?

COLONEL LIVERMORE.—I understand that is a correct inference from what they have decided, but I may be wrong. I wish to say further, that we should be

extremely glad to entertain the view which the chairman intimates may be the correct one, that the Legislature could enable us to sell that land regardless of the abutters, but our counsel whom we have employed in the matter, and who are learned in the law, have not been able to come to that conclusion. And as for myself, with a certain reminiscence of legal learning which I once had, I have not been able to come to that conclusion.

THE CHAIRMAN.—The Legislature does some very queer things.

COLONEL LIVERMORE.—It does.

THE CHAIRMAN.—And if some of our laws are not better obeyed than others I know of, I don't think it makes so much difference what the State thinks about it.

COLONEL LIVERMORE.—I sympathize with you; but for the moment assuming that what I suppose to be the legal situation is the true situation, this is the fact—that the Institute of Technology cannot now sell the Boylston Street property for its adequate value and devote the proceeds to the new site. At any rate, the Executive Committee of the Institute, of which I am a member, has acted upon that hypothesis and has assumed that the property cannot be sold for an adequate value and that until the abutters themselves release that right, the Institute must make whatever use they can make of the Boylston Street property.

We are not without hopes that in the course of time, as business advances to the westward, and invades Newbury Street, that it will become apparent to the abutters that it is for their pecuniary interests to have those restrictions released, but at what time that will happen no one can predict.

THE CHAIRMAN.—If those restrictions were not there what do you believe that property would be worth?

COLONEL LIVERMORE.—Well, I have not made any estimate, but I assume that what Dr. Maclaurin said may be relied upon as the probable value,—$2,000,000. But assuming that we cannot sell that land today for its true value, the plans of the committee have been to continue to occupy the buildings on Boylston Street for one department of the Institute while moving other departments to the new site, and probably continue to occupy those buildings on Boylston Street until the legal situation shall be changed. The other land on Clarendon Street, and the buildings, I have reason to believe can be sold for three-quarters of a million dollars, and it results that to move to the new site the Institute must raise from its friends a million dollars or a million and a half in addition to what has already been offered for the site.

Now, it is because we must raise that sum to move that we cannot hope to get the additional sum from our friends to make up the deficit, that we are asking the Legislature that the State may contribute a hundred thousand dollars a year during ten years. I want to add one word as to my views upon the policy which should govern the State in matters like this. I should not wish to subscribe to the view that the State ought to embark on a policy of giving aid to all institutions of higher learning in the state; I don't think it would be a good fiscal policy, and do not think it would be wholesome, and I do not think it would be for the benefit of the institutions themselves. I think that the so-called institutions of liberal learning can, in the future as they have in the past, depend upon private contributions. Their education is more in the nature of a luxury than is technical education that is offered at the Institute of Technology, and some other institutions in the state, and people are ready to contribute for their luxuries and are not ready to contribute for the economical welfare of the State; and it seems to me if I were upon this committee, with my present lights, I should wish to consider whether this subsidy was one which contributed to the economic benefit of the State. And because to my mind it is most essential for the economic welfare of the State to support the Institute of Technology, I am willing to appear here and advocate as a citizen the grant of this $100,000 a year.

This State has very little out of which to make money; its agricultural products

are one fifteenth of the value of the manufactured products. It has ice, it has granite, and I don't know of anything else that it produces except men, and the best crop it can cultivate for its future is men—men to bring a revenue to the Commonwealth.

Mr. Hart, who followed Colonel Livermore, said that he thought it would be a surprise to the community in general if they could know the sacrifices made by Massachusetts boys who go to the Institute for an education and the enormous advantages which they derive from their training there. He thought that there were more Massachusetts boys who were obliged to make sacrifices than those from other states for the reason that their parents lived in the vicinity giving them an opportunity which those farther away do not have. He spoke of the prospects of the Institute for securing aid from alumni and the community in general and indicated that the people would be largely influenced by the action of the Legislature upon this matter. If the question of running expenses could be taken care of, donors would be encouraged to give for the construction of buildings and for equipment.

Mr. Chase presented financial statistics of the Institute in tabular form to the members of the committee and made a statement in regard to the deficits during recent years.

Mr. Clark spoke as follows: "Colonel Livermore has said that which I wished to say, so much better than I could have said it, that I need only say amen to what he has said with regard to the economic value of the Institute to the State. My interest in this matter is not simply in the men who graduate from the Institute; I wasn't fortunate enough to be a graduate myself, but my interest in it lies in the effect on the working people of Massachusetts, and it is my belief that the effect of the kind of men that the Institute sends today into our manufacturing industries, is very great, and the good effect of one such a man in a concern cannot easily be over-estimated.

"Our working people like to work with men of that character,—men of trained minds, men with the new methods who are able to supplement by their technical knowledge the practical knowledge which our working people have."

A Member.—I would like to ask if you have graduates of Tech working in the Plymouth Cordage Works?

Mr. Clark.—Our present treasurer and general manager was a graduate of the Institute, Mr. Frank Holmes.

The Chairman.—How many others have you?

Mr. Clark.—I could not state that; Mr. Holmes is the most prominent one. I am not appearing in an official capacity, but as a private citizen who has been manufacturing thirty years in the Commonwealth and I can think of many graduates of the Institute whose work I have followed.

The Chairman.—You appear as a private citizen, and you do not think this request is excessive.

Mr. Clark.—It is a very large amount of money, but on the other hand isn't it true that the saving in any industry by men of bright minds very often runs in excess of this in a single industry? I believe that is the case in very many. There is the industry I am connected with; I can recall three instances where savings of many thousands of dollars have been made annually by men with technical training.

Mr. Clark was followed by Mr. McElwain who said: "The value to New England of an institution that can turn out men qualified to cope with and absolutely solve the problems of the elimination of waste in time and material is of inestimable value. Such is my opinion of the Institute of Technology, and I believe that any sum of money that may be appropriated will be returned to the community by seeing its industries thrive and prosper because of their efficiency, notwithstanding the barriers as far as freight rates and competition with the West are concerned.

"You might ask why we, as shoe manufacturers, should have in our employ twenty Institute men, and I will tell you the reason. It is because we have absolutely got to have men who have

keen, analytical minds, and who are truthful observers,—people who do things, and not people who talk. Now, that is what we really get out of the Institute men.

"I should like to see the money appropriated because I believe that future generations of New England will bless you, because the industries of New England or the future success of New England depends largely on its handling successfully the large plants that are located in this section; and those plants, in order to be run successfully, must be handled by men imbued with the scientific spirit. I believe that the Institute of Technology can develop men who can operate these plants successfully for the future, and I believe it is up to the manufacturer to take these men and develop them into positions of responsibility. The age of rule-of-thumb is gone and science must have its day even more in the future—particularly with the shoe industry."

THE CHAIRMAN.—What is the specific employment of those twenty men; what do they do?

MR. MCELWAIN.—I think there is creeping into business today more than ever what is termed today "scientific management." Now, scientific management means largely planning out the work beforehand in a very definite form, and that requires a very analytical mind, and a mind which can grasp details. Now, these men that we employ are largely engaged in what you might call efficiency work and in planning work. We have two types of mind in our business,—one is this scientific man who is planning, who is economizing, who is figuring where we can save money in handling help and material; and the other type of man who is more generally executive.

Mr. Morss made a brief statement in regard to the assistance the alumni had given to the Institute as follows: "There have been two main efforts on the part of the alumni as a body for securing money for the Institute. First, there was a subscription started to provide a building as a memorial to President Walker, this being in the form of a subscription payable annually for five years, and the amount raised for that was approximately $100,000; raised, I will say, in small subscriptions, for if I remember the largest wasn't over a thousand dollars. And about 1905, a subscription was raised to help pay the running expenses of the Institute; that taking the form of a subscription as before, annually for five years. The result of that subscription has been that beginning with 1906 there has been paid into the treasury of the Institute for the expense account $206,000 during the five years, and in approximately a steady amount each year. Now, the result of those two subscriptions is that the men have paid, as they say, last year's coal bill for five years. It is rather hard to get men to pay last year's coal bill; they would rather pay something else.

"Instead of asking that, we wish them to help furnish money to put the buildings on the new site which we expect to have very shortly, and there is absolutely no doubt in my mind that they will give double for a new building as compared with what they would give for coal bills."

Mr. Wrightington who was the last speaker spoke in high terms of work done by Technology men and stated that the prosperity of the Consolidated Gas Company was very dependent on technically trained men as were other large institutions of the community. He said the State had a distinct duty to perform in granting the assistance which the Institute of Technology needs.

The Alumni Association Needs Your Support

Any former student of the Institute making application for associate membership to the secretary of the Alumni Association, and passed upon favorably by the Executive Committee, can become an associate member on the payment of the regular dues of $2.00 per year, which includes subscription to the nine issues of TECHNOLOGY REVIEW.

Things are Moving Faster at Tech

Tech Club of Washington

The Washington Society of the Institute of Technology has issued a directory showing that there are 159 members of the society in Washington proper and 99 members in the vicinity, or a total of 258 members. The first part of the directory contains a historical sketch which shows that the society was founded in 1899 with a membership of twenty men. The society took a leading part in the founding of the University Club in Washington and when the new clubhouse was built, the first smoker was held by Technology alumni.

Addition to Sanitary Research Staff

Simeon C. Keith, Jr., '93, chemist and industrial biologist, has been appointed assistant professor of bacteriology at the Institute on the staff of the sanitary research laboratory. It is also announced that an anonymous donor has just given this laboratory $6,000 for carrying on its work which, with previous gifts from the same friend, makes a total of $50,000 up to date.

New Automobile Delivery Truck

The Institute has just purchased a new automobile delivery truck for general expressing and "pick-up" work about the city. The Bursar found that by investing in a truck, a considerable amount now paid to local expressmen could be saved. The truck is in charge of the chief engineer's department.

Death of Frank S. Farrell

Frank S. Farrell, '05, died at his home in Stoughton, February 25th. Mr. Farrell was an expert sugar chemist and was employed by the Emerson Research Laboratory at the time of his death.

DISCUSSING ASSOCIATE MEMBERSHIP

Council Recommends Changes in Constitution of Alumni Association giving Associates all privileges of regular Members

The meeting of the Alumni Council at the University Club, February 24th, was of unusual interest. It was called to discuss the question of abolishing associate membership in the Alumni Association, and allowing non-graduates elected to membership the same privileges as graduates. This matter has been the subject of more or less discussion during the last few years, and it seemed appropriate to bring it up at this time because of the recommendation by a special committee of the Association that the graduates of the School of Mechanic Arts be eligible for election to associate membership. The report of Charles F. Park, '92, chairman of this committee, is of much interest, and will be found on another page of the REVIEW.

To make this possible the sections of the Constitution to be changed as proposed are as follows:

ARTICLE II.

SECTION 1. The Association shall consist of regular and honorary members.

SECT. 2. The regular membership shall consist of all persons who have received a degree from the Institute, and of such other persons as may be duly elected by the Executive Committee, who have been connected with the Institute as students in any class already graduated, or the former School of Mechanic Arts.

SECT. 3. Any present or former member of the Corporation or of the Faculty of the Institute may be elected an honorary member by the Executive Committee of this Association.

SECT. 4. Honorary members shall be entitled to all privileges of regular members, except that of holding the elective offices in this Association specified in Article III, Sections, 1, 4 and 5.

Messrs. A. F. Bemis, '93, H. W. Tyler, '84, R. H. Richards, '68, Everett Morss, '85, and E. G. Thomas, '87, spoke in favor of the change. The tenor of their remarks being that the chief object of the Association is to "further the well-being of the Institute by fostering the interest of its members in the school and in each other," and that the effectiveness of the Association would be largely increased by this change.

Dr. F. H. Williams, '74, was opposed to admitting graduates of the School of Mechanic Arts, stating that this would tend to lower the standard of the Alumni Association.

The discussion that followed showed former students of the School of Mechanic Arts would be desirable members and would undoubtedly be of much assistance in advancing the interests of the Association and the Institute. The list comprises some men of national reputation. Mr. Bemis raised the point that nothing the Association could do would change the standard of the Institute, and that already associate members of the Association had every privilege of regular members except that of holding certain elective offices. He also showed that former students of the School of Industrial Science who attended but one year and took courses similar to those given in the School of Mechanic Arts are eligible as associate members of the Association. Professor Richards spoke of having met in his travels a number of men who studied at the School of Mechanic Arts and who have become prominent in their professions. The original proposition included only the graduates of the School of Mechanic Arts, but after discussion, and in view of the fact that the number eligible was small, it was voted to frame the Constitution so that all members of the school are eligible. This was passed, one voice dissenting.

It was voted to submit a change in Section 2 of Article V, as follows:

The Executive Committee shall look after the general interests of the Association, shall have power to fill all vacancies arising among officers or committees elected by the Association, shall have full charge of balloting, shall pass upon all applications for membership in the Association.

Since the meeting of the Council, two of its members who were not present at the meeting and who are opposed to making associate members, regular members of the Alumni Association, have requested that this whole matter be reconsidered. In accordance with this request, Dr. Noyes, president of the association has called a meeting for March 21st.

If the Council does not change its decision, ballots will be sent out to the members of the Association to decide whether or not the constitution shall be changed as suggested. If the change is carried, the Executive Committee will elect all present associate members to full membership in the Association. Graduates will, by virtue of their degree, become members on their graduation; non-members applying for membership will be passed on by the Executive Committee, and if elected, will become full members.

I. W. Litchfield, '85, editor of THE TECHNOLOGY REVIEW, asked for a change in the by-laws in accordance with a recent ruling of the postmaster-general which makes it necessary to separate the subscription to that magazine from the dues of the Association. The Alumni Council has power to make the change in the by-laws after notice has been published for one month in THE TECHNOLOGY REVIEW. The proposed changes are as follows:

ARTICLE VI

SECTION 1. The annual dues for all except honorary members shall be one dollar and with subscription to THE TECHNOLOGY REVIEW, two dollars.

ARTICLE VII

SECTION 1. THE TECHNOLOGY REVIEW shall be the official organ of this Association and its editorial management and publication shall be vested in the Council.

SECT. 2. Members not in arrears shall be entitled to receive all publications of the Association except THE TECHNOLOGY REVIEW to which they may subscribe at the rate of one dollar per year.

Leonard Metcalf, '92, reported progress for the committee in charge of providing a camp for the Summer School of Civil Engineering.

J. W. Rollins, '78, chairman of the Alumni Committee on State Aid, made a report of the work of that committee.

At the request of President Maclaurin, Dr. Noyes appointed a committee to provide entertainment for the alumni attending the Congress of Technology on Monday, April 10th, as follows: George B. Glidden, '93, chairman; F. H. Fay, '93, C. C. Peirce, '86, H. W. Gardner, '94, and I. W. Litchfield, '85.

Dr. Maclaurin, who was present, outlined the plans for the Congress of Technology and also spoke in favor of the change in the constitution abolishing associate membership, believing that this would be of advantage to the Institute.

It was voted to recommend the following change in the constitution to be voted on by the Association:

ARTICLE VI

SECT. 2. A payment of an amount equal to twenty-five times the annual dues plus the subscription to THE TECHNOLOGY REVIEW shall exempt a member from further payment of dues and further payment of subscription to THE TECHNOLOGY REVIEW.

There were about thirty-five members of the Council present.

New Jersey Recruits Tech Men

George T. Palmer, '09, research assistant in the sanitary research laboratory and sewage experiment station at the Institute, has accepted a position as sanitary inspector for the New Jersey State Board of Health. He is a graduate of the University of Rochester, and is the seventh Tech man enlisted with this State Board of Health.

April Number of the Review

The April number of the Review will be a magazine number uniform with the quarterly formerly published. It is now hoped that this can be issued about the first of April. It will contain the latest news relative to the Congress of Technology.

AN INTERESTING REPORT

Status of Students of School of Mechanic Arts with reference to admission to Alumni Association

For a number of years the question of admitting the students of the School of Mechanic Arts to membership in the Alumni Association has been agitated. During the last year, C. F. Park, '92, and F. W. Hobbs, '89, were made a committee to investigate this matter fully and make a final report. The report is an interesting one and we publish it herewith:

The School of Mechanic Arts was established by the Institute in 1876 and discontinued in 1888. During that period a considerable number of students attended the school, but only about fifty of them were graduated. At that time the school was one of two schools of the Institute of Technology, the other school being the School of Industrial Science,—the only one now existing, and generally known as the Institute. The Institute was also conducting free courses for the trustee of the Lowell Institute, but these courses were not a part of the Institute of Technology.

The first announcement of the school in the Institute Catalogue (1876) read as follows:

"A series of shops having been provided for teaching the students in the department of Mechanical Engineering, the use of tools in wood and iron work by the class system, a two years' course in Practical Mechanism has also been established for those who wish to become master mechanics rather than engineers, and especially for the large class of pupils to whom such a systematic training will prove a valuable foundation for further engineering or other scientific study.

"It affords, also, a good English as well as a good disciplinary education, in preparation for any department of life.

"Tuition $125 a year." The tuition was afterwards raised to $150 a year.

In the following year (1877) the name of the school was changed to the School of Mechanic Arts, and the catalogue statement read as follows:

"A School of Mechanic Arts, in which special prominence is given to manual instruction, has been established for those who wish to enter upon industrial pursuits, rather than to become scientific engineers. This school is designed to afford . . . students . . . an opportunity to continue the elementary scientific and literary studies, together with mechanical and free hand drawing, while receiving theoretical and practical instruction in the use of typical hand and machine tools for working iron and wood. The full course includes two years of theoretical and practical studies combined, and students, who successfully complete it, will receive a certificate. Applicants must be at least fifteen years of age, and must pass a satisfactory examination in: Arithmetic, including the Metric System, Geography, Spelling, Punctuation, English Composition, and American History. The beginning and ending of the school year and the days of examinations are the same as in the School of Industrial Science.'

"The two years' course included—Shop Instruction, Algebra, Plane and Solid Geometry, Elementary Physics, English Composition, Mechanical and Freehand Drawing, and French,—twenty-eight hours a week of exercise.

"Another change in the catalogue statement of the school was made in 1883. The statement for that year reads:

"For the benefit of those who are unable, for want of time or means, to go through one of the regular courses of the School of Industrial Science, and yet desire a good preparation for industrial pursuits, a subordinate School of Me-

chanic Arts has been established by the Corporation of the Institute."

The catalogue for the years 1876–1883 gave the names of the students in this school, and it included their number in the summary of the number of students at the Institute. It also included, from 1878–1883, the names of the instructors of the school in the same list with the instructing staff of the School of Industrial Science. The names of the graduates were also printed in the Program of Graduation Exercises of the regular Institute classes.

1. It appears that the School of Mechanic Arts was a part of the Institute of Technology; and, in accordance with the constitution of the Association, the committee believes that the graduates of this school are *legally* "regular members" of the Association, the same as all graduates of the Institute.

2. Morally, or in the spirit under which the constitution was drafted, the committee believes that these men would *not* be included as regular members, the name "Institute" being intended for the School of Industrial Science.

"ARTICLE II

"SECT. 2. All graduates of the Institute shall be regular members."

3. The committee believes that these men would be desirable "associate members."

4. The committee believes that to exclude legally these graduates of this school as regular members requires a change in the constitution regarding regular members. The committee believes also that to include them legally as associate members would require a change in the constitution regarding associate members.

5. The committee believes that to make change in the constitution regarding association members would involve inconsistencies unfair to many men.

The committee therefore recommends that Section 2 of Article II of the constitution be changed to the following:

"SECT. 2. 'All persons holding a degree of the Institute shall be regular members.' "

That graduates of the School of Mechanic Arts be received as associate members the same as other persons who have taken special or partial courses at the Institute, and

That other men who have been connected with the School of Mechanic Arts as students be *not* received as associate members.

Historical Photographs Wanted

The committee on lantern slides and moving pictures for the Technology Anniversary smoker in Symphony Hall on Monday evening, April 10, will be glad to receive any old photographs, sketches, or other material which can be worked up into a lantern slide and which will be of general interest to the Tech men present. Anything of a historical or humorous nature will be very acceptable and assurance is given that anything lent will be carefully guarded and returned without injury. Address Prof. Charles E. Locke, Chairman, Massachusetts Insitute Technology, Boston, Mass.

Standardizing Health Reports

Selskar M. Gunn, '04, former health officer of Orange, N. J., who came to the Institute this year to be research assistant in sanitation, has assembled reports of about one hundred small cities for comparison and standardization. In his experience at Orange he was impressed with the lack of uniformity in the various reports, and has been led to undertake this important work.

Where the Whalers Spin Yarns

The New Bedford alumni are all said to be web-footed and they are homesick when away from the breakers' roar. Here is our invitation to the last meeting:

A meeting of the Technology Club will be held on board the steamer, *Gay Head*, at the foot of William Street on the night of Thursday, March 9, at 8 o'clock.

There will be something to eat and something to drink and a speaker.

Be a good old salt and come along.

LOWELL SCHOOL FOR INDUSTRIAL FOREMEN

An Institution that is filling a unique place in industrial education—Institute Professors on Faculty

The March magazine number of the *Outlook* contains an article on the foundation of the Lowell Institute by John Lowell, Jr., a merchant prince of Boston, who died in 1836. John Amory Lowell, cousin of the founder and grandfather of President Lowell of Harvard was the first trustee. The first lectures were given in 1840 in the Odeon, formerly the Federal Street Theater and afterward in Marlboro Chapel on Washington Street. Since 1879 these lectures have been given in Huntington Hall, at the Institute and some of the most brilliant thinkers of the 19th and 20th centuries have addressed these audiences. The particular portion of the article of special interest to alumni concerned in industrial education relates to the Lowell Institute Evening School for Industrial Foremen provided by this fund.

The admirable purpose underlying the School for Industrial Foremen may best be explained, says the *Outlook*, by quoting a statement made by its director, Prof. Charles F. Park, of the Massachusetts Institute of Technology. "For more than a quarter of century," he pointed out, "Lowell free courses for advanced students had been given by the professors of the Institute of Technology. These courses had done no small amount of good; but, with the increased educational facilities of all kinds in Boston, they seemed to be less necessary than they were formerly. They had, moreover, covered many subjects without much relation to one another, and at the present day we are learning the great advantage of systematic study."

"On the other hand, among the different classes in our community, there appeared to be one which had hardly received the attention it deserved. We have heard a great deal of late years of captains of industry, but the efficiency of the industrial art depends in a very large measure, and probably to a constantly increasing extent, upon the capacity of its non-commissioned officers—in other words, upon the foremen and superintendents. These men receive the same education today as the ordinary mechanic, and it was thought that it would

Prof. C. F. Park, '92, Director of the School

be a great benefit to the community at large if they could have some instruction in the principles of applied science, so that they might understand more thoroughly the work they were superintending, and be ready to apply improvements.

"It was felt, also, that a better educated class of foremen would be a benefit to the community socially, as an intermediary class between the employer or engineer, on the one hand, and the workmen on the other. To attempt to

train young men separately for the position of foremen would have been, under the existing organization of labor, an impossibility. The foremen must continue, for the present at least, to be promoted from among the workmen. In giving them such an education as is desired, therefore, it was necessary to take men who were already working at their trade; and hence instruction could be given only in the evening."

Opened in the fall of 1903, the school has been increasingly successful, and many of its graduates, thanks to the training received, have won promotion in the machine shops and other industrial plants where they are employed. Two courses, one mechanical and the other electrical, are offered, each extending over two years, and each demanding hard work of its students. Not all of the latter are foremen in the strict sense of the word, but they are young mechanics and electricians earnestly desirous of 'getting on in the world' and making themselves more useful members of society. Only a small proportion of those who apply are admitted to the courses, for the demand is so great that the resources of the Institute of Technology, in whose buildings the instruction is given, would be unduly taxed if a severe entrance examination did not keep down the evening school membership. The average class enters about one hundred and twenty-five, which represents perhaps a fifth of those taking the preliminary examination. The faculty consists of essentially the same men doing the same kind of work during the day in the regular Tech courses, and instruction is by means of lectures, recitations, drawing-room practice, laboratory work, and home work. Certificates are granted to all passing another stiff examination at the end of the second year. No charge whatever is made for tuition.

Mechanical Engineering Research

One of the research problems that is being studied at the present time is an experiment on the 250-foot chimney of the Edison Electric Company's power house. One result of this investigation has been to show that the increased height of a chimney beyond a certain point does not affect the amount of draft.

Another student is conducting exhaustive tests on the problem of cooling water from condensers. The roof of the engineering laboratory has been made into a reservoir and various devices have been tested. Spraying nozzles thus far have been found to be the best.

Stated Luncheons

BOSTON: The Classes from '01 to '10 meet at the American House Rathskeller, Hanover Street, Fridays, 12.30 to 1.30 p. m.

CHICAGO: Northwestern Association of M. I. T., at Vogelsang's Restaurant, 178 Madison Street, Thursdays, at 12.30 p. m.

PROVIDENCE: Technology Club of Rhode Island, at Brucker's Hotel, Thursdays, at 1 p. m.

ST. LOUIS: Technology Club of St. Louis, at the St. Louis Lunch Room, 4th and Locust Streets, Fridays, at 1 p. m.

WASHINGTON: Washington Society of the M. I. T., at Wallis' Cafe, 617 Twelfth Street, Wednesdays, 12 to 1 p. m.

Class of '96 to Celebrate

The class of '96 is making plans to celebrate its 15th anniversary next June. At a recent meeting of the class it was voted to rendezvous at Dr. Schubmehl's camp at Little Squam Lake and start a new set of traditions at this hospitable haven. Five years ago the class of '96 celebrated its tenth anniversary in camp at Ipswich, Mass.

Annual Meeting of Rhode Island Club

The Technology Club of Rhode Island will hold its annual meeting on Saturday, evening, March 25th. The weekly luncheons are well attended and Tech men who happen to be in Providence on Thursdays, often drop in at Brucker's Hotel.

CONGRESS OF TECHNOLOGY

Marking the 50th Anniversary of the Granting of the Charter to the Massachusetts Institute of Technology

PROGRAM

MONDAY, APRIL 10:

2.30 Address by the President of the Institute and opening session of the Congress in Huntington Hall. Open to the public.

6.00 Most of the graduate classes will dine together.

8.00 Anniversary smoker at Symphony Hall. The Waltham Watch Company Band of thirty pieces will be in attendance. A number of new and special entertainment features will be introduced, and refreshments will be served. Accommodations for 1100 on the floor. Tickets, $1 each; balcony seats for ladies, 50 cents each. Five dollars ($5) entitles former students and undergraduate seniors to tickets for smoker and banquet.

TUESDAY, APRIL 11:

11.00 to 1.00 and 2.30 to 4.30.
Sessions of the Congress in the Institute buildings. Open to the public.

7.00 sharp.
Subscription banquet in Symphony Hall, to be addressed by a notable group of successful pioneers of industry. Arrangements of an unusual character are being made for this banquet. Covers will be laid for a thousand guests. Subscription ticket, $5; ladies' tickets, for the balcony, 50 cents each.

Applications must reach Mr. Walter Humphreys, Massachusetts Institute of Technology, Boston, by April 8th. Tickets will be mailed unless otherwise ordered.

An information bureau will be maintained in Rogers Building, 491 Boylston Street.

Merrimack Valley Club

The tenth annual meeting of the club was held at the Yorick Club, Lowell, on Wednesday evening, February 15, 1911. There were thirty-one members present.

Previous to the dinner officers were elected for the coming year as follows:

President Edward B. Carney, '93, Lowell; vice-president, Ivar L. Sjöström, '88, Lawrence; secretary, John A. Collins, Jr., '97, 67 Thorndyke Street, Lawrence; treasurer, William O. Hildreth, '87, Lowell; member of executive committee, Edmund T. Simpson, '90, Lowell; representative to Alumni Council, Charles H. Eames, '97, Lowell.

Resolutions were adopted on the death of two members, William K. Fairbanks, '97, of Lowell, and Linwood O. Towne, '78, of Haverhill.

After the dinner, President George A. Nelson, who presided, introduced John C. Chase, '74, of Derry, N. H., representative to the Alumni Council, who gave a condensed report of the work of that body. The secretary gave a short history of the growth of the club as outlined by the records of the meetings, calling particular attention to the fact that the society was seventh in date of organization of a total of thirty clubs, being preceded only by several of the larger bodies such as those of Washington, New York, Chicago, etc.

The guest of the evening was Henry A. Morss, '93, vice-president of the Simplex Electrical Company, Boston, and one of the alumni representatives on the Corporation. He is also a prominent member of the committee which is promoting the interests of the bill now before the Legislature, asking for an annual grant of $100,000 for ten years. Mr. Morss detailed the progress of the bill up to date, spoke of the support and approval it was receiving from all sides, and again emphasized by a presentation of statistics the absolute necessity of favorable action in the general court. He exhibited photographs of drawings for the proposed new buildings, and said that on April 10, at the fiftieth anniversary of the founding of Technology, an announcement of the proposed new site would be made and the place visited. His remarks were most entertaining, and as he closed he was given much applause and a rousing Tech cheer. R. A. Hale, '77, for Lawrence, and president-elect E. B. Carney, '93, for Lowell, reported progress in interviewing members of the Legislature and acquainting them with the particular needs of the Institute.

During the evening Edgar H. Barker, '96, assisted by G. H. Perkins, '99 entertained the members with Technology and other songs.

The meeting was one of the most successful ever held by the club.

Those present were H. A. Morss, '93, Carney, '93, Nelson, '77, Hale, '77, Chase, '74, Hildreth, '85, Ashton, '95, Kimball, '86, Faulkner, '76, Alden, '77, Foster, '03, Stevens, '10, Gilbert, '95, Reed, '09, Perkins, '99, Barker, '96, Eames, '97, Hammond, '97, Keables, '09, Bramhall, '10, Bowen, '07, Poore, '09, Bowers, '09, Davis, '06, Stephens, Simpson, '90, Lambert, '98, Stickney, '75, Eastman, '88, Hildreth, '87, Collins, '97.

Death of William K. Fairbanks

William K. Fairbanks, '98, died suddenly after an operation, January 29th. Mr. Fairbanks was born October 5, 1875, and after leaving the Institute, entered the employ of the Bigelow Carpet Company, Lowell, Mass., and at the time of his death was agent for this company. He leaves a widow and three sons. Mr. Fairbanks resided at Lowell, Mass.

New Officers in Buffalo

At the annual meeting of the Technology Club of Buffalo, February 24, the following officers were elected: W. H. Watkins, '95, president; Richard F. Morgan, '96, secretary; W. L. Spaulding, '05, treasurer. The executive committee will consist of H. A. Boyd, '79, and E. F. Vogel, '00.

New York Club Elects Officers

At the annual meeting of the Technology Club of New York, held at the club house, 17 Gramercy Park, February 4th, the following were elected to serve on the Board of Governors: G. W. Kittredge, '77, Ira Abbott, '81, F. C. Schmitz, '95, D. W. Edgerly, '98, and R. H. Howes, '03, representing the membership at large to serve for one year; Allen Hazen, '88, representing classes from '89 to '93, to serve for two years; Van R. Lansingh, '98, representing classes from '98 to '02, to serve for five years.

A vote of thanks was passed to Harold Binney, '88, Francis C. Green, '95, Allston Sargent, '98, P. A. Warner, '92, and R. S. Allyn, 98, former officers whose terms have expired.

A resolution was adopted urging members to exert their influence to assist in securing an annual grant of $100,000 from the legislature of Massachusetts.

At the first meeting of the Board of Governors, February 24, the following officers of the club were elected: William H. King, '94, president; G. W. Kittredge, '77, vice-president; Ira Abbott, '81, treasurer; and Walter Large, '79, secretary.

Chairmen of the following standing committees were appointed as follows: Membership Committee, F. C. Schmitz, '95; House Committee, D. W. Edgerly, '98; Entertainment Committee, R. H. Howes, '03; Class Reunions, F. G. Cox, '03; Business Opportunities, Allen Hazen, '88; Publicity, Van R. Lansingh, '98; Library, Noel Chamberlain, '04; Printing, C. M. Joyce, '03; Representative on Alumni Council, Francis C. Green, '95.

A letter of appreciation was sent to the alumni of Springfield for their interest and enterprise in offering the Institute a new site.

F. G. Cox, '03, will represent the New York club in assisting the Massachusetts alumni to secure the state appropriation asked for.

The board also took measures to cooperate in raising an alumni fund as a testimonial at the coming celebration of the fiftieth anniversary of the Institute.

Weekly Luncheons in St. Louis

At an informal meeting of Technology men in St. Louis, Mo., February 10, it was voted to have a luncheon every Friday at the St. Louis Lunch Room, 4th and Locust Streets. It is likely that a permanent organization will soon be formed. In the meantime, Amasa M. Holcombe, '04, formerly secretary of the Washington society, will act as secretary. There will be two or three smokers this winter at the University Club or some other convenient place, and it is likely that a small council will assist in carrying out any arrangements of a social nature that may be undertaken. M. L. Emerson, '04, of Boston, who was in St. Louis at the time, was present at the meeting.

A New Mining Society

Among the directors of the newly organized Mining and Metallurgical Society of America, is Dr. Robert H. Richards, professor of mining engineering at the Institute. The purposes of this society are scientific, educational and social, the object being to bring together those who are particularly qualified by knowledge and experience in mining or allied work. Walter R. Ingalls, '86, editor of the *Engineering and Mining Journal*, is also one of the directors.

Effect of Ultra-Violet Rays

An interesting piece of research work is now being carried on at the Institute by Maurice R. Scharff, '09, graduate student and assistant to President Maclaurin, on the effect of ultra-violet rays on living organisms. The experiments are being conducted with a view to determining the practical value of these rays in destroying bacteria and other organisms in air and liquids.

First Meeting of 1910

The class of 1910 held its first post-graduation gathering when over two-score of its members assembled for a "get-together" dinner at the Boston City Club on the evening of Saturday February 25.

A feature of the evening was the "economic productiveness test" in which thirty-eight of the representatives of the "working class" recorded their February salary. The results were interesting: four men claimed over $100, the highest being $150; three men received less than $50, the lowest being $44; the average figure was $72.34.

Songs, cheers and the menu kept every one busy from the start. After dinner each man in turn arose and stated where he was located, and whether or not he was still in a blessed state of singleness. The latter statement was always eagerly awaited. It was remarked that before the Institute moves, the burning question of class baby will probably be settled.

Those present were: K. P. Armstrong, A. J. Beach, L. E. Briggs, M. A. Coplan, A. Curtis, A. H. Curtis, O. J. Crommett, L. H. Downs, Jr., A. A. Gould, C. E. Green, H. A. Hale, Jr., G. James, E. A. Kollen, F. R. Lufkin, H. F. Miller, J. B. Myrick, A. R. Nagle, J. W. Northrup, D. Peabody, H. R. Perry, F. J. Pitcher, M. D. Price, T. C. Quirk, N. Ransohoff, G. B. Reynolds, L. E. Sawyer, J. Scheuer, N. S. Seeley, C. H. Shaw, W. Spaans, R. H. Taylor, R. Torrey, A. P. Truette, W. R. Waldo, R. P. Watson, J. T. Whitney, B. S. Wholgemuth and C. W. Wilson. Bergen Reynolds officiated, and was occasionally heard above the uproar.

New Register of Former Students

It has been decided to proceed at once with the preparation of a new edition of the Register of Former Students which shall be as nearly correct as is possible to have it. The amount of work necessary to produce such a publication will probably require six or eight months so that it may not be published until the end of this year.

A special request is made of all former students of the Institute to assist in securing correct addresses for men whose addresses are not known or are uncertain. Please communicate with Walter Humphreys, Registrar, if you can give any information in this connection.

The Register of Former Students is one of the most important publications that the Institute has ever issued and the new edition will be welcomed by the alumni.

Tech Men Head the Revolution

The revolution in Mexico has an interest for Technology men inasmuch as the leader, Francisco Madero, is the father of three former students of the Institute,—Alfonso, '01, Emilio, '02 and Julio '07. One of the sons is connected with the revolutionist junta with an office in New York and the others are actively engaged in the revolution, one of them being in charge of the transportation of all the troops. The Madero family is one of the oldest and wealthiest in the state of Coahuila. Three other Madero boys from another branch of the family were also Technology students. This branch, however, is understood to be out of sympathy with the revolution.

Revision of Qualitative Analysis.

The research laboratory of physical chemistry of which Dr. A. A. Noyes is director and with which Dr. Lewis is associated, has taken up again its work in the systematic revision of qualitative analysis. Qualitative analysis has been built up piecemeal on the foundations furnished nearly a century ago. The science has been in need of revision, and this Professor Noyes has supplied so far as the metallic elements are concerned. Under his direction Dr. H. G. Falk has started on a new scheme of determining the analysis of the acid elements.

Cosmopolitan Club Active

The Technology Cosmopolitan Club gave a very novel entertainment to its members on February 24th when the entire program was presented by the Latin-American members of the club. The men taking part were from Argentine Republic, Chili and Cuba.

Leopold L. Sandstein, '11, of Christ Church, New Zealand, who presided, introduced David Montt, '12, of Santiago, Chili, nephew of the late President of that country, who delivered an address on the advancement of the Latin-American races which was followed by a discussion in which José M. Cadenas, '13, of Havana, led. The musical program was furnished by Leon R. O'Farrell, '14, of Buenos Ayres, who sang native songs. Daniel Uribe, of Colombia, rendered some Colombian songs, and Milo Lemus, of Cuba, a student at the New England Conservatory of Music, gave several selections on the piano.

February 25th was British night. The program consisted of an illustrated talk on Australia by L. H. Lehmaier, '13, of Australia; a song by H. R. L. Fox, '12, and an illustrated lecture on the British Provinces describing Cape Town, the Kimberley mines and the primitive customs of the natives, by E. W. Mason, '12; a violin solo by B. H. Morash, '12, and an illustrated talk on New Zealand by Edward Hurst, '13; a talk by R. J. Murphy, '14, on Newfoundland, illustrated with lantern slides; also an illustrated talk on the Fiji Islands by L. M. Sandstein, '11. Three of the students from the British provinces gave a blood-curdling imitation of the Maori war cries. The other foreign nights are as follows: Chinese night, March 11, American night, March 25, French night, April 8th, Japanese night, April 27, German and Ottoman night, May 13.

A Museum of Public Health

Prof. C.-E. A. Winslow, '98, of the New York Museum of Natural History, proposes to develop scientific work along practical lines directly beneficial to the masses of the people. He plans to build up his new department principally along the lines of bacteriology and municipal sanitation. In the bacteriological laboratory now being equipped there will be kept in cultivation a complete collection of bacteria which will be secured from the various colleges and health laboratories all over the world. The museum will thus act as a central bureau for the interchange of specimens of bacteria. This will afford an unusual opportunity for an improved biological classification.

The Museum of Municipal Sanitation will be the only one of its kind in the country, Germany alone now possessing such expositions.

Coöperating with the Congress of Technology

A meeting of the Association of Class Secretaries is called for March 16th to take action on the participation of the classes in the Congress of Technology on the occasion of the fiftieth anniversary of the signing of the Institute's charter.

It is understood that some of the fraternities at the Institute will invite visiting alumni members to luncheon on April 11. This coöperation of effort will assist in bringing the attention of the alumni to the Congress. It is also expected that the graduate and non-graduate members of the Osiris will meet at breakfast on April 11.

Aid for Thermal Research

At the recent meeting of the Rumford Committee of the American Academy, a grant of $400 was made to Prof. Charles L. Norton, professor of heat measurements at the Institute of Technology, to aid research on insulation.

With Tech as with Adam and Eve, the world is all before it where to choose, but Tech has not had a fall, though it has eaten freely of the tree of knowledge.

—*Boston Herald.*

New Corporation Members

After the meeting of the Corporation of the Institute held March 8th, it was stated that the Institute has decided on a site that it would like to have if it can secure proper terms, and it is further stated that that site is in greater Boston. The Corporation is considering a number of sites, but as negotiations are still pending, no action was taken at the meeting. The Institute has a certain amount fixed for the price it will pay and if the site in question cannot be secured for the amount of money within the limit decided on, then another tract will be negotiated for.

Three new life members of the Corporation were elected at this meeting; T. Coleman du Pont, '84, president, E. I. du Pont de Nemours Powder Co., Wilmington, Del.; Arthur F. Estabrook, of Estabrook & Company, bankers of Boston, and John M. Longyear, of Brookline, Mass.

The alumni term members of the Corporation elected are Henry Howard, '89, H. A. Morss, '93, and Arthur Winslow, '81.

Power Station Design

Prof. E. F. Miller, '86, has begun a new course of lectures in power station design at the Institute this term. The problem in hand at the present time is the designing of two rubber mills of given outside dimensions and horse-power of engines. The temperature of the rooms, conductivity of the walls, amount of air circulated, etc., are also specified. Students are required to furnish a design that will give the best economy for the amount of money invested.

Newton Scholarship

Technology men in Newton are actively engaged in raising funds for a scholarship at the Institute of Technology to be given yearly to a graduate of the Newton High School. The reward is to be made in recognition of personal merit and of high scholarship, particularly in science and mathematics, and shall not imply pecuniary need. The committee is aiming to secure a fund of $6,000 for permanent maintenance. Mr. Harry J. Carlson, '92, is secretary of the joint committee.

Technology Club of Northern Ohio

The Technology Club of Northern Ohio is to have a meeting on March 11th about the time the REVIEW goes to press This is the way the notice of the meeting reads:

The annual dinner of the Northern Ohio Technology Club will be pulled off at the Hermit Club, Saturday evening, March 11th, at seven o'clock.

Things at Old Tech are booming and every effort is being made to make this dinner a huge success. Wear any old thing. All those desiring to make speeches will be accommodated. Bring plenty of conversation and lots of close harmony. Bring your singing voice.

If you know of any Tech men whose names you have any reason to suppose are not on our lists make sure that they will be with us. Buffalo, Cincinnati, Detroit, Springfield, etc., are "raising Ned" and its up to us to beat them.

A CHALLENGE FROM DETROIT.

We have received a challenge from the Detroit Association daring us to meet them at Put-in-Bay next summer and engage in any kind of contest and claim they can beat us at what we can do best. Let's show 'em up.

The enclosed postal is an important item. If you will sign and mail at once, it will greatly assist those in charge.

BIG AWAKENING

Boston Tech

We are going to get together on

March the Eleventh

You will be advised as to details later on

Remember the Date

SOMETHING DOING IN CLEVELAND

About Sites

A feeling against moving away from Boston and the problem of taxation on college property in that city are two reasons against moving Technology to Cambridge, in the opinion of President Richard C. Maclaurin, expressed last evening.

It is known that among the sites now under consideration by the Executive Committee of the Corporation two or three are in Cambridge. The Cambridge Board of Trade has assured Dr. Maclaurin that every means would be used to obtain land for the college along the river front at reasonable prices.

"The Corporation has not definitely decided on any particular location," said Dr. Maclaurin last night. His statement on the Cambridge location is as follows:

"The advisability of our going to Cambridge is being urged upon Technology from a large number of sources. Invitations have been received from the mayor of Cambridge, the Cambridge Tax Payers' Association, Cambridge Club, Citizens' Trade Association and many prominent business and educational men of the city.

"I have also received numerous petitions from the people of Cambridge asking for 'favorable consideration to locate the Institute of Technology on land bordering on the Charles River esplanade.'

"There are many sites bordering on the Charles river and a number of them offered us have many attractions from the point of accessibility and expansion. Some of this land can be obtained at a very reasonable price.

"The objections of going to Cambridge mainly refer, first, to moving the Institute of Technology away from Boston, and, secondly, to taxation of college property.

"Technology has been associated throughout its history with the city of Boston and there is a strong feeling that the school of applied science should continue in that association."

Regarding the other objection, he said:

"There has apparently been much unrest in Cambridge by certain few people at having so much property of the city exempt from taxation. From this alone there might be serious objection to increasing the amount of property which would come outside the taxable list.

"If the Greater Boston plan should go through, the first objection would be removed, and no one can doubt that the institute going to Cambridge and locating on the water front would greatly add to the wealth of the city and save the Charles River esplanade from being occupied by manufacturing plants and other commercial structures."—*Boston Herald*, March 10.

The Tallest Office Building

The tallest office building in the world is to be built in New York from the designs of Cass Gilbert, '78, architect. It will be a fifty-five story building between Barclay Street and Park Place. It will be 750 feet high or about 50 feet higher than the Metropolitan Tower and nearly 100 feet above the Singer Tower. It will be exceeded by only one building in the world, the Eiffel Tower, 980 feet high. It will probably cost over $12,000,000.

Grant from the Carnegie Institution

The Carnegie Institution has just made to Prof. A. A. Noyes a grant of three thousand dollars for carrying forward investigations on the properties of salt solutions in relation to the ionic theory. Professor Noyes will make a report of progress to the present time in a paper before the American Philosophical Society on April 22.

The Geology of Europe

Prof. H. W. Shimer, of the geological department, is preparing to deliver a course of lectures next year on the geology of Europe. During the summer he will traverse the continent from Naples to Norway with a run into France and across to Great Britain to complete the material for this course.

Tuition—Fees—Scholarships

Higher education is self-supporting only under very exceptional conditions. Whenever it is made so there must be either inadequate or underpaid instruction, or the tax upon the students must be excessive. No modern state can afford to have higher education restricted to those who can bear its cost, or to let it depend upon the accidents of private generosity. The extent to which students in different parts of the country pay for their own education in engineering branches has been recently investigated on behalf of the University of Nebraska, with the following results. The figures cover *all fees* except laboratory charges *for four-year courses.*

Univ. of Cal.	$32
" " Neb.	34
" " Kan.	50
" " Col.	65
" " Ill.	110
" " Minn.	120
" " Mo.	120
" " Wis.	140
" " Mich.	508
" " Yale	514
" " Cornell	716
" " Harvard	716
M. I. T.	1000

The students of the Institute contributed towards its income in 1909–10 more than $335,000, or nearly 60%, of its total income.

Scholarship funds at the Institute now amount to more than $344,000 besides the state scholarships and the Edward Austin Fund of $375,000, which is largely employed for this purpose. These represent the admirable generosity of private givers to needy students, but to *every student who receives a full scholarship the Institute must make an additional contribution nearly as large as the scholarship.* The education of the student at the Institute costs directly for the four-year course about $1,000. Of this amount the student pays $1,000, the state about $60, the United States about $40, while the remaining $800 represents present or past generosity of friends of the school. If the state grant is increased to the extent desired it will still represent a contribution of only about one-sixth of the annual outlay, or one-eighth the total cost.

Additional free scholarships would help the students, but increase the burden on the school.

As Others See Us

The last (October) issue of the TECHNOLOGY REVIEW, published by the Alumni Association of M. I. T., contains the announcement that the "tremendous increase of alumni interest in Technology affairs all over the country has made it necessary for the Alumni Association to establish closer relations with its members, and it has therefore been decided to issue THE TECHNOLOGY REVIEW monthly," omitting August, September and October.

This exhilarating development of Tech spirit is largely a new growth, dating from the days when the merger with Harvard was under discussion. The REVIEW is serving an admirable purpose in getting the alumni in touch with each other as well as with their Alma Mater. This issue contains 55 large pages of "News from the Classes." Beginning with 1868, there are reports from 30 different classes. Each is headed by the name and address of the secretary. The material in these reports is of the most diverse character, all the way from mere address lists, or "vital statistics," to reprints of paragraphs from magazine articles and political platforms by alumni and to extracts from many individual letters. From 1882 on, only two classes are not represented. The entries are informal, human and often breezy. It is no wonder that every live alumnus looks forward with interest to the coming of each number of the REVIEW. Its subscription price is now included with the regular annual dues of the Alumni Association.—*Worcester Polytechnic Institute Journal.*

Local alumni associations will hold meetings April 11 and get in touch with Boston.

ALUMNI ASSOCIATION

OF THE

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

OFFICERS

President, A. A. Noyes, '86 (term expires in January, 1912).

Vice-Presidents, { Franklin W. Hobbs, '89 (term expires January, 1912).
Frederick K. Copeland, '76 (term expires January, 1913).

Secretary-Treasurer, Walter Humphreys, '97 (term expires January, 1912).

Executive Committee

The President, Vice-President, and Secretary-Treasurer.
Walter E. Piper, '94 (term expires January, 1912).
George W. Swett, '03 (term expires January, 1912.)
Frank W. Hodgdon, '76 (term expires January, 1913).
Eugene C. Hultman, '96, (term expires January, 1913).

Representatives at Large

Term expires January, 1912

Charles Hayden, '90.
Allan W. Rowe, '01.
Eben S. Stevens, '68.
Stoughton Walker, '87.
George V. Wendell, '92.

Term expires January, 1913

Oakes Ames, '85.
Harry E. Clifford, '86.
Howard L. Coburn, '98.
Franklin T. Miller, '95.
Willis R. Whitney, '90.

Term Members of the Corporation

Term expires March, 1912

George W. Kittredge, '77.
Frank G. Stantial, '79.
George E. Hale, 90.

Term expires March, 1913

Walter B. Snow, '82.
Theodore W. Robinson, '84.
Charles R. Richards, '85.

Term expires March, 1914

Frank W. Rollins, '81.
Edwin S. Webster, '88.
Edward Cunningham, '91.

Term expires March, 1915

James W. Rollins, Jr., '78.
Everett Morss, '85.
Arthur T. Bradlee, '88.

Term expires March, 1916

Henry Howard, '89.
Henry A. Morss, '93.
Arthur Winslow '81.

Nominating Committee

Term expires January, 1912	Term expires January, 1913	Term expires January, 1914
F. H. Hunter, '02.	F. H. Fay, '93.	A. F. Bemis, '93.
E. H. Huxley, '95.	W. B. Snow, '82.	J. W. Rollins,' 78.
H. W. Tyler, '84.	C.-E. A. Winslow, '98.	F. L. Locke, '86.

STANDING AND SPECIAL COMMITTEES

Committee on Permanent Funds

Robert H. Richards, '68, to serve until the annual meeting in 1913.
James P. Munroe, '82, to serve until the annual meeting in 1912.
Francis C. Green, '95, *Treasurer*, to serve until the annual meeting in 1914.

Advisory Council on Athletics

J. Arnold Rockwell, *Chairman*, '96 (term expires in 1913).
Allan W. Rowe, '01 (term expires in 1911).
J. L. Batchelder, '90 (term expires in 1912).

Committee on Publication of The Technology Review

Walter Bradlee Snow, '82.
Walter Humphreys, '97.
Arthur Amos Noyes, '86.
Frederic H. Fay, '93.
Isaac White Litchfield, '85, *Editor*.

Walker Memorial Committee

Harry W. Tyler, '84, *Chairman*.
Charles M. Baker, '78, *Treasurer*.
Charles-Edward A. Winslow, '98, *Secretary*.

Robert H. Richards, '68.
Everett Morss, '85.
John L. Batchelder, '90.
Thomas Hibbard, '75.
William B. Thurber, '89.
Albert F. Bemis, '93.

Tech Show Advisory Council

M. L. Emerson, '04.
I. W. Litchfield, '85.

Committee on Musical Affairs

George B. Glidden, '93, *Chairman*.
Harry S. Mork, '99.
Maurice R. Scharff, '09.

Committee on Summer School of Surveying

Leonard Metcalf, '92, *Chairman*.
F. H. Fay, '93.
A. F. Bemis, '93.

Committee on State Aid

J. W. Rollins, '78, *Chairman.*

A. F. Bemis, '93.
J. A. Curtin, '92.
F. W. Hobbs, '89.
E. C. Hultman, '96.
I. W. Litchfield, '85.
F. L. Locke, '86.
A. A. Noyes, '86.
F. T. Miller, '95.
Henry A. Morse, '93.
M. E. Pierce, '96.
Jasper Whiting, '89.
H. W. Tyler, '84, *Secretary.*

Committee on Congress of Technology

R. C. Maclaurin, *Chairman.*

For the Corporation

George Wigglesworth.
Charles W. Hubbard, '75.
Thomas L. Livermore.

For the Faculty

Arthur A. Noyes, '86.
W. T. Sedgewick.
Dugald C. Jackson.

For the Alumni Association

A. D. Little, '85.
Frederic H. Fay, '93.
Russell Robb, '88.

COUNCIL OF THE ALUMNI SSOCIATION

Officers of the Association:—

President, A. A. Noyes, '86.
Vice-Presidents, Franklin W. Hobbs, '89, Frederick K. Copeland, '76.
Secretary-Treasurer, Walter Humphreys, '97.
Executive Committee, { Walter E. Piper '94. George W. Swett, '03. } Frank W. Hodgdon, '76. Eugene C. Hultman, '96.

Five latest living ex-Presidents:—

Walter B. Snow, '82. Frank L. Locke, '86.
Everett Morss, '85. Edwin S. Webster, '88.
A. F. Bemis, '93.

Representatives at large:—

Charles Hayden, '90. Oakes Ames, '85.
Allan W. Rowe, '01. Harry E. Clifford, '86.
Eben S. Stevens, '68. Howard L. Coburn, '93.
Stockton Walker, '87. Franklin T. Miller, '95.
George V. Wendell, '92. Willis R. Whitney, '90.

Class Representatives:—

'68, Robert H. Richards.
'69, Howard A. Carson.
'70, E. K. Turner.
'71, E. W. Rollins.
'72, Edgar W. Upton.
'73, F. H. Williams.
'74, George H. Barrus.
'75, Thomas Hibbard.
'76, C. T. Main.
'77, John Alden.
'78, C. M. Baker.
'79, E. C. Miller.
'80, George H. Barton.
'81, John Duff.
'82, James P. Munroe.
'83, Harvey S. Chase.
'84, Harry W. Tyler.
'85, I. W. Litchfield.
'86, A. A. Noyes.
'87, E. G. Thomas.
'88, Arthur T. Bradley.
'89, Henry A. Howard.
'90, William Z. Ripley.
'91, Charles Garrison.
'92, Leonard Metcalf.
'93, Frederic H. Fay.
'94, S. C. Prescott.
'95, Andrew D. Fuller.
'96, J. A. Rockwell.
'97, C. W. Bradley.
'98, W. Hollis Godfrey.
'99, H. J. Skinner.
'00, N. J. Neall.
'01, Robert L. Williams.
'02, F. H. Hunter.
'03, Myron H. Clark.
'04, M. L. Emerson.
'05, G. DeW. Marcy.
'06, John J. Donovan.
'07, Lawrence Allen.
'08, H. T. Gerrish.
'09, M. R. Scharff.
'10, Herbert S. Cleverdon.

Local societies with representation on the Council:—

Technology Club of the Merrimack Valley, Charles H. Eames, '97.
Technology Club of New York, Francis C. Green, '95.
North-Western Association, M. I. T., I. W. Litchfield, '85.
Pittsburg Technology Association, Harry A. Rapelye, '08.
Technology Club of Philadelphia, William H. Blakeman, '05.
Washington Society of the M. I. T., I. W. Litchfield, '85.
Technology Club of Milwaukee, I. W. Litchfield, '85.
M. I. T. Club of Central New York, James P. Barnes, '95.
The Cincinnati M. I. T. Club, John A. Hildabolt, '75.
Technology Club of Northern Ohio, John E. Kreps, '87.
Technology Club of Rhode Island, E. B. Homer, '85.
Technology Club of Puget Sound, I. W. Litchfield, '85.

Other local societies not yet appointed a representative on the Council:—

Technology Club of Buffalo.
Technology Club of Central Pennsylvania.
Technology Club of the Connecticut Valley.
Detroit Association of the M. I. T.
Technology Club of Hartford, Conn.
Inland Empire Association of the M. I. T.
Technology Club of Minnesota.
Technology Club of New Bedford.
Technology Association of Northern California.
Technology Association of Oregon.
Rocky Mountain Technology Club.
Technology Club of the South.
Technology Club of Southern California.
Vermont Technology Association.
Brookline Technology Association.

CLASS SECRETARIES

ROBERT HALLOWELL RICHARDS . . . . . '68
Massachusetts Institute of Technology, Boston.

HOWARD ADAMS CARSON . . . . . '69
79 Glenwood Street, Malden, Mass.

CHARLES ROBERT CROSS . . . . . '70
Massachusetts Institute of Technology, Boston.

EDWARD WARREN ROLLINS . . . . . '71
Dover, N.H.

CALVIN FRANK ALLEN . . . . . '72
Massachusetts Institute of Technology, Boston.

SAMUEL EVERETT TINKHAM . . . . . '73
126 Thornton Street, Roxbury, Mass.

CHARLES FRENCH READ . . . . . '74
Old State House, Boston, Mass.

EDWARD A. W. HAMMATT. . . . . '75
Hyde Park, Mass.

JOHN RIPLEY FREEMAN . . . . . '76
815 Banigan Building, Providence, R. I.

RICHARD AUGUSTUS HALE. . . . . '77
Essex Company, Lawrence, Mass.

E. P. COLLIER . . . . . '78
274 Summer Street, Boston, Mass.

EDWIN CHILD MILLER . . . . . '79
Wakefield, Mass.

GEORGE HUNT BARTON. . . . . '80
16 Lexington Avenue, Cambridge, Mass.

FRANK ELDEN CAMB . . . . . '81
Metcalf Apartments, Westmount, Quebec, P.Q.

WALTER BRADLEE SNOW . . . . . '82
170 Summer Street, Boston, Mass.

HARVEY STUART CHASE . . . . . '83
84 State Street Boston, Mass.

HARRY W. TYLER . . . . . '84
Massachusetts Institute of Technology, Boston

ISAAC WHITE LITCHFIELD . . . . . '85
Massachusetts Institute of Technology, Boston

ARTHUR GRAHAM ROBBINS. . . . . '86
Massachusetts Institute of Technology, Boston,

EDWARD GALBRAITH THOMAS . . . . . '87
36 High Street, Brookline, Mass.

WILLIAM GAGE SNOW . . . . . '88
24 Milk Street, Boston, Mass.

WALTER H. KILHAM . . . . . '89
9 Park Street, Boston, Mass.

GEORGE L. GILMORE . . . . . '90
Lexington, Mass.

HOWARD CARLETON FORBES . . . . . '91
88 Broad Street, Boston, Mass.

W. SPENCER HUTCHINSON . . . . . '92
1235 Morton Street, Mattapan, Mass.

W. A. JOHNSTON . . . . . '92
Asst. Secretary, Mass. Institute of Technology.

FREDERIC HAROLD FAY . . . . . '93
60 City Hall, Boston, Mass.

SAMUEL CATE PRESCOTT . . . . . '94
Massachusetts Institute of Technology, Boston.

GEORGE A. ROCKWELL. . . . . '95
101 Tremont Street, Boston, Mass.

CHARLES E. LOCKE. . . . . '96
Massachusetts Institute of Technology, Boston.

JOHN ARTHUR COLLINS, JR. . . . . '97
67 Thorndyke Street, Lawrence, Mass.

ERNEST F. RUSS . . . . . '98
70 High Street, Boston, Mass.

HERVEY JUDSON SKINNER . . . . . '99
93 Broad Street, Boston, Mass.

NEWITT J. NEALL . . . . . '00
12 Pearl Street, Boston, Mass.

ROBERT L. WILLIAMS . . . . . '01
154 Magazine Street, Cambridge, Mass.

FREDERICK HUSTON HUNTER . . . . . '02
75 Park Street, West Roxbury, Mass.

FREDERIC ARTHUR OLMSTED . . . . . '03
Care of Williamette Pulp & Paper Co., Oregon City, Oregon.

R. H. NUTTER . . . . . '03
Res. Secretary, Box 272, Lynn, Mass.

EVERETT OSGOOD HILLER. . . . . '04
54 Grand View Ave., Wollaston, Mass.

ADDISON F. HOLMES . . . . . '04
Res. Secretary, 41 Ruggles Street, Boston, Mass.

GROSVENOR DEWITT MARCY . . . . . '05
246 Summer Street, Boston, Mass.

RALPH R. PATCH . . . . . '06
15 Lincoln Street, Stoneham, Mass.

BRYANT NICHOLS . . . . . '07
143 Garland Street, Everett, Mass.

W. N. BIGELOW . . . . . '07
Res. Secretary, 724 Lexington Street, Waltham, Mass.

JOHN T. TOBIN . . . . . '08
Care of F. F. Harrington, Bridge Engineer, Virginian Ry. Co., Norfolk, Va.

RUDOLPH B. WEILER . . . . . '08
Res. Secretary, 26 Brooks Street, Brighton, Mass.

CARL GRAM . . . . . '09
2009 Chestnut Street, Philadelphia, Pa.

MAURICE R. SCHARFF . . . . . '09
Res. Secretary, M. I. T., Boston, Mass.

JOHN MOXCEY FITZWATER . . . . . '10
119 Henry Street, Brooklyn, N.Y.

G. BERGEN REYNOLDS . . . . . '10
Res. Secretary, Care Y. M. C. A., Southbridge, Mass.

LOCAL ALUMNI ASSOCIATIONS

Boston — Technology Club of Boston, Dr. Robert Seaton Williams ('02), Secretary, 83 Newbury Street, Boston. Mass.

☞ Luncheon — The classes from '01 to '10 meet at the American House Rathskeller, Hanover Street, Fridays, 12.30 to 1.30 p. m.

Brookline — Brookline Technology Association, George Lawrence Smith ('97), Secretary, 20 Central Street, Room 7, Boston.

Buffalo — Technology Club of Buffalo, R. F. Morgan ('96), Secretary, 139 W. Oakwood Pl., Buffalo, N. Y.

Chicago — North-Western Association of the M. I. T., Meyer J. Sturm ('96), Secretary, S. 704 84 La Salle Street, Chicago, Ill.

☞ Luncheon — Thursdays at 12.30 p. m. at Vogelsang's Restaurant, 178 Madison Street.

Cincinnati — The Cincinnati M. I. T. Club, Herman W. Lackman ('05), Secretary, 819 W. 6th Street, Cincinnati, Ohio.

Cleveland — Technology Club of Northern Ohio, Sidney Young Ball ('03), Secretary, 1847 East 97th Street, Cleveland, Ohio.

Denver — Rocky Mountain Technology Club, Maurice Bigelow Biscoe ('93), Secretary, 25 East 18th Street, Denver, Col.

Detroit — Detroit Technology Association, Granger Whitney ('87), Secretary, Detroit Iron and Steel Company, Detroit, Mich.

Harrisburg — Technology Club of Central Pennsylvania,

Hartford — Technology Club of Hartford, Conn., George William Baker ('92), Secretary, Box 983, Hartford, Conn.

Lawrence, Lowell — Technology Club of the Merrimack Valley, John Arthur Collins, Jr. ('97), Secretary, 67 Thorndike Street, Lawrence, Mass.

Los Angeles — Technology Club of Southern California, L. A. Parker ('06), Secretary, 764 Pacific Electric Building, Los Angeles, Cal.

Milwaukee — Technology Club of Milwaukee, Charles J. McIntosh ('03), Secretary, care Pierce Motor Company, Racine, Wis.

Minneapolis — Technology Club of Minnesota, Jacob Stone, Jr. ('99), Secretary, 1029 Security Bank Building, Minneapolis, Minn.

New Bedford — Technology Club of New Bedford, Mass., Charles Frederic Wing, Jr. ('99), Secretary, 36 Purchase Street, New Bedford, Mass.

New Orleans — Technology Club of the South, Frank Wyman Crosby ('90), Secretary, 501-504 Denegre Building, New Orleans, La.

New York — Technology Club of New York, Walter Large ('79), Secretary, 15 William Street, New York, N. Y.

Philadelphia — Technology Club of Philadelphia, W. H. Blakeman ('05), Secretary, 1618 Green Street, Philadelphia, Pa.

Pittsburg — Pittsburg Technology Association, Waldso Turner ('05), Secretary, 1174 Frick Building Annex, Pittsburg, Pa.

Portland — Technology Association of Oregon, Antoine Gilbert Labbé ('07), Secretary, 227½ Washington Street, Portland, Ore.

Providence — Technology Club of Rhode Island, William C. Dart ('91), Secretary, 148 West River Street, Providence, R. I.

☞ Luncheon — Thursdays at 1 p. m. at Brucker's Hotel.

Rochester — Technology Club of Rochester, J. F. Ancona ('03), Secretary, 190 Birr Street, Rochester, N. Y.

St. Louis — Technology Club of St. Louis, Amasa M. Holcombe ('96), Acting-secretary; care of Carr & Carr, 510 Pine Street, St. Louis, Mo.

☞ Luncheon — Fridays, at 1 p. m. at the St. Louis Lunch Room, 4th and Locust Streets.

San Francisco — Technology Association of Northern California, Howard Coburn Blake ('98), Secretary, 926 6th Street, Sacramento, Cal.

Seattle — Technology Club of Puget Sound, L. A. Wallon ('04), Secretary, The Seattle Electric Company, Seattle, Wash.

Spokane — Inland Empire Association of the M. I. T., Philip F. Kennedy ('07), Secretary, 61120 Hamilton Street, Spokane, Wash.

Springfield — Technology Club of the Connecticut Valley, Edmund Parsons Marsh ('99), Secretary, P.O. Box 791, Springfield, Mass.

Stockton — Technology Club of Central Pennsylvania, Stephen Bedlam ('00), Secretary, Box 183, Stockton, Pa.

Syracuse — M. I. T. Club of Central New York, H. N. Burhans ('07), Secretary, 227 McLennan Avenue, Syracuse, N. Y.

Washington — Washington Society of the M. I. T., Dolce G. Haynes ('09), Secretary, United States Patent Office, Washington, D. C.

☞ Luncheon — Wednesdays at 12 to 1 p. m. at Wallis' Café, 617 Twelfth Street.

Worcester — Worcester County Technology Club, H. M. Latham ('93), Secretary, 94 Grove Street, Worcester, Mass.

FIXED LUNCHEONS

Boston — the '01-'10 Luncheon Club at American House Rathskeller, Fridays, 12.30-1.30 p. m.

Chicago—Northwestern Association of M. I. T., at Vogelsang's Restaurant, 178 Madison Street, Thursdays, at 12.30 p. m.

Providence—Technology Club of Rhode Island, at Brucker's Hotel, Thursdays, at 1 p. m.

Washington—Washington Society of the M. I. T., Wednesdays, at 12-1 p. m. at Wallis' Café, 617 Twelfth Street.

St. Louis—Technology Club of St. Louis, at the St. Louis Lunch Room, 4th and Locust Streets, Fridays, at 1 p. m.

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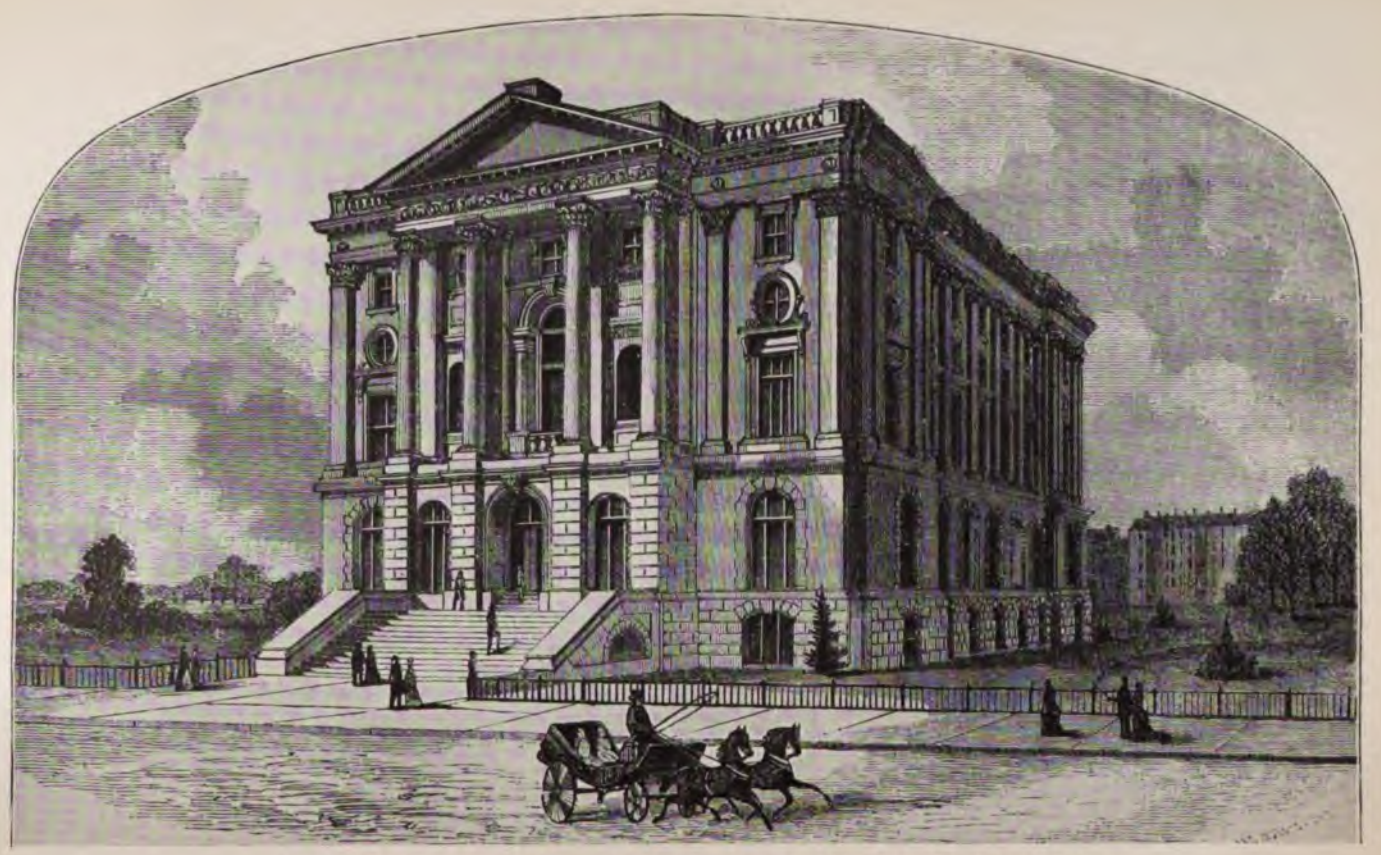

THE ROGERS BUILDING.—FROM THE SEVENTH ANNUAL CATALOGUE

TECHNOLOGY'S FIFTIETH ANNIVERSARY

Great preparations for the Congress of Technology to be held April 10 and 11—The smoker and banquet will be memorable affairs—Delegations coming from many states

During the last few weeks the newspapers throughout the length and the breadth of the land have had much to say about the Institute and its influence on the industrial development of the country during the last half century. With no dissenting voice they unite to do honor to this pioneer institution whose influence is now being felt in such a direct way in the arts and industries of the nation. As the Chicago *Evening Post* recently said, "One does not need to be an infatuated alumnus of the institution to appreciate the noteworthy part it has played in the development of the United States," for wherever the rails of advancing civilization have penetrated, wherever the earth is giving up its treasures at the beck of the mining engineer, wherever electricity pulsates into light and power, wherever wheels turn and the elements are harnessed to produce or refine, there is Technology best known and appreciated.

The anniversary we are about to celebrate is chiefly notable because this will be the beginning of a period of still greater usefulness. Tech men have been quick to realize that it is the most important event in the recent history of the Institute, and the local alumni associations in the nearby states are preparing to send large delegation to the Congress. The secretaries of the various classes are arranging for large class demonstrations; the various fraternities have arranged luncheons for the visiting brethern on Tuesday; Osiris will have a breakfast on Tuesday morning and the undergraduates are arranging for a field day Monday afternoon and a large dinner on Wednesday evening, which every undergraduate may attend.

A bureau of information will be established in the library of Rogers Building, where a committee, with Prof. C. F. Park, '92, as chairman, will attend to all inquiries.

The public sessions of the Congress which will consist in the presentation of the notable papers already announced will be held in Huntington Hall and various lecture rooms. The meetings of the different sections will be bulletined in the corridor of Rogers Building.

Nearly all the classes have arranged to meet together for dinner at 6 o'clock on Monday, April 10, and go in a body to the anniversary smoker at Symphony Hall at 8'clock. This smoker will be of an unusual character. George B. Glidden, '93, chairman of the committee, has arranged a program which will be most interesting and unique. Among the features to be presented will be special acts by the Chinese and South African members of the Cosmopolitan Club, specialties selected from the olio of the performance recently given by the "Chocolate Soldiers" minstrel aggregation, selections by the Glee Club, etc. Please understand, however, that there is to be no set program. It is rather intended to be a social evening where members of the various classes can mix and fraternize. At intervals the various specialties that have been provided will be produced. The most irresistible of all the features of the evening will be the reproduction of some choice pictures from old Techniques. These lantern slides are being prepared under the direction of Prof. C. E. Locke, '96, Mr. G. DeW. Marcy, '05, and Prof. Allen W. Rowe, '01. Souvenir pipes and tobacco and light refreshments will be provided by the committee in charge.

Arrangements for the banquet on Tuesday evening, April 11, are being made on an imposing scale, and it is expected that every seat in the hall will be taken. Provision is now being made to entertain one thousand people. Charles C. Peirce, '86, is chairman of the committee having the banquet in charge, and the decorative features have been entrusted to Prof. H. W. Gardner, '94, assisted by a committee. This committee on decoration has been making a thorough study of the possibilities at Symphony Hall and a number of new and brilliant effects are contemplated. It is to be remembered that to this banquet have been invited a large number of the substantial citizens of Boston and vicinity who are interested in the Institute, and that this anniversary will mark the beginning of an active campaign for funds from the general public. It is most desirable that there be a large alumni attendance. The speakers will be men of national reputation in

the fields of industry, science and education. The governor and mayor have been invited and Dr. Maclaurin will preside. Among those that have been invited to be the guests of the Corporation are the living members of the original Corporation and Faculty and presidents of national scientific and engineering societies.

It is expected that some interesting photographs will be thrown on the screen during the banquet, and that during the evening important announcements may be made. The price of tickets to the banquet will be $5.00 each, and alumni purchasing a banquet ticket will also receive a ticket to the smoker. The members of the senior class will be considered alumni on the occasion of this Congress. Balcony tickets for the smoker will be sold at fifty cents each to alumni, their friends and to undergraduates. The seats in the balconies will be filled with ladies and their escorts as is usual at Pop concerts. On the occasion of the banquet, alumni and others purchasing a banquet ticket will be supplied with as many tickets for the balcony as they desire. Undergraduates who wish to take their friends to the balconies on that evening may purchase tickets at fifty cents each. Application for tickets should be made to Walter Humphreys, secretary, M. I. T.

Steamer Tested by Naval Architects

The department of naval architecture of Technology has just completed an important test at sea of a new steamer, the *Sankaty*, built by the Fore River Works for service between New Bedford and Nantucket. The company requested the Technology men to do the testing on account of new apparatus of special efficiency which has been devised by Institute authorities. The mile was covered twenty times at slightly increasing speeds, and then a four-hour run at about maximum speed was undertaken up the coast and return. The *Sankaty* is a steel screw steamboat of 188 feet length with triple expanding engines. The tests have not yet been figured. The same department is getting the *Froude* ready for another season of experiment in the Charles River Basin. The *Froude* is the model boat that was in use last season, and will be put this year into experiments to determine the inter-action between propeller and hull.

THE BEGINNING OF THE INSTITUTE

Reprint of an article by James Phinney Munroe in the Technology Quarterly for May, 1888.

In an obscure corner of the Boston Daily *Advertiser* for Feb. 21, 1859, appears the condensed report of a meeting of "Individuals representing Associations of Agriculture, Horticulture, Art, Science, and various Industrial, Educational, and Moral Interests of the State," the results of whose deliberations were to be of far-reaching importance, and whose matured plans were to found an institution known throughout the civilized world. The account states that the meeting held in the library of the Boston Society of National History (then located on Mason Street), on Feb. 18, 1859, was attended by about forty gentlemen. Mr. Marshall P. Wilder was elected chairman, and Dr. Samuel Kneeland, Jr., secretary. After the formalities of organization, the chairman stated the object of the meeting to be that of taking steps toward memorializing the Legislature for a grant of land belonging to the Commonwealth, in aid of a plan for a conservatory of art and science. "The reading of a portion of the Governor's message in which he refers to the value of the public lands, and advises a certain disposition to be made of them, brought the matter fairly before the meeting."

Professor Agassiz, Hon. Alex. H. Rice, Mr. John D. Philbrick, and others spoke. While one of the gentlemen advocated the reservation of an open space of Back Bay land, for the reason, chiefly, that the residents of Beacon Hill, heretofore cooled in summer by the breezes from the Back Bay, might not suffer by the filling in of that body of water, and although another of the speakers had so mean an idea of the enterprise as to urge the purchase of the Hancock estate, then on sale, the majority of those present were more serious in purpose and more generous in plan than these, and heartily indorsed the proposal for the reservation of a large tract of the still unfilled Back Bay. A committee of seven was appointed with power to memorialize the Legislature,

in such manner as seemed desirable, for purposes of the proposed "Conservatory of Art, Science, and Historical Relics."

The committee thus commissioned lost no time in preparing and presenting their petition, for upon March 31, 1859, two days before the close of the session, the joint special committee of the Legislature appointed to investigate the matter presented their report* to that body. This report contains the memorial; and as the latter is the first definite exposition of the idea which had for so long been germinating in the minds of its promoters, it may be of interest to transcribe it with some fullness. Its main points are as follows:—

"The undersigned . . . respectfully represent . . . that in our opinion a most effective method of making those lands" [belonging to the Commonwealth, lying near the Public Garden in the city of Boston] "available in promoting education, as well as directly developing the wealth of the State, would be for the Legislature to pass a Resolve reserving from sale a portion of said lands, and dedicating them as a space to be used in all coming time for the erection of a building or buildings by various institutions for public benefit, which in the aggregate would constitute and might be known as the Massachusetts Conservatory of Art and Science.

"The Committee, without undertaking to specify in detail the extent of space to be reserved or the specific purposes to which it should be dedicated, would simply suggest the character of a few leading institutions, which, if once established on the grounds, would form a nucleus around which would cluster kindred associations of immense value to the people of the State.

"Taking the Commissioners' Plan as a basis for illustration, we would suggest the reservation of as much as four squares for this purpose.

"Section No. I. might be devoted to collections of implements, models, and other objects pertaining to Agriculture, Horticulture, and Pomology.

"Section No. II., to Natural History, Practical Geology, and Chemistry, with ample room for museums of specimens.

"Section No. III., to those institutions devoted to the development of Mechanics, Manufactures, and Commerce.

"Section No. IV., to Fine Arts, History, and Ethnology.

"The space reserved for each section should be ample for these and all institutions of a kindred character which the future progress of the State may develop. . . .

"It is not proposed to merge the different institutions in one,—the perfect individuality of each being retained in every respect,

*House Doc. No. 260, 1859.

having nothing necessarily in common but the general fostering care of the State. . . .

"It is not proposed that the legal title to the land be conveyed, but the fee to remain to the State. . . .

"The Committee have reason to believe that there are now existing several well-established institutions which will avail themselves of the privilege under the reservation, if made, and will erect a building or buildings thereon for their respective uses as soon as the land can be put in readiness for occupation. . . .

"In conclusion, the Committee, while heartily sympathizing with the efforts now in progress to form a Museum of Natural History and Comparative Zoölogy under the auspices of Professor Agassiz, at Cambridge,* for the development of abstract science, desire to coöperate with such labors in the building up of institutions of a more directly practical character, which will enable the masses of the people engaged in industrial occupations more effectually to avail themselves of the advantages to be derived from the labors of those who are wholly devoted to purely scientific research."

This first exposition of the plans of its promoters shows their scheme to have been essentially a popular one. They hoped to educate the people,—to so train artisans and mechanics, that the relations between them and the men of science might be made more close; that the theory of the latter might be verified and checked by the work of the former, who, in their turn, should derive incalculable benefit from the experiments and researches of the scientists. Popular lectures, skillfully arranged museums, published reports of scientific research, were to be the means for education, and examinations and other tests leading to diplomas, were to form the immediate aim and measure of the work.

The Legislative Committee, in transmitting the memorial to the General Court, take it up point by point, enlarging upon and emphasizing the several details. They say: " . . . The objects contemplated in the memorial under consideration assume a position of great importance as an educational measure, and in the opinion of your Committee the plan, considered merely as a financial measure, should not be regarded with indifference by the State. Her future industrial progress will be greatly influenced by the practical educational facilities which these institutions, by their union, are designed to afford. The existence of such

*Between 1859 and 1874, $355,707.67 was appropriated by the General Court of Massachusetts in aid of this institution.

grand, practical schools in Europe requires of us to take all possible advantage of our resources in this direction, under the penalty of taking a second-rate position among the nations; and this no true American will be content to do without a struggle for the supremacy." After enlarging upon the educational advantages of the scheme proposed, after pointing out the benefits accruing to the State, to its people and industries, by such exhibitions and lectures as the plan of the memorialists contemplates, the committee consider the practical side of the question, the material advantage to the State, in the following words:—

"The Committee will venture an opinion, proved by all experience, that the surest way of increasing the value of unoccupied land, is to leave open spaces for public buildings like those proposed in this plan. The very fact of the location of these structures there would bring the land more rapidly into the market at increased prices, and secure a first-class population from the beginning. Unless some such plan be adopted, few persons would be likely to purchase except in the immediate vicinity of the Public Garden.

"The Committee are of the decided opinion that the reservation from sale of the land asked for in this memorial, will tend greatly to enhance the value of the remaining lands; and in their judgment this increase will equal the sum which the State would receive from the sale of the reserved portion. . . .

"Ample space is necessary in the beginning, in order that the various associations disposed to profit by it be neither crowded nor amalgamated. Space is the more important, as it is desirable that every county in the State should there have a space for the display of its products in every department of industry. . . .

"The land should remain open for some years, to allow associations, industrial and commercial, yet unformed, to avail themselves of the reservation.

"Finally, your Committee would state, that as the societies are ready to unite, so are the people apparently prepared and eager for such an association of institutions as would be established by their union. This practical age demands practical, as well as theoretical, education. . . . And your Committee are of the opinion that the reservation of the land . . . should be made, believing it will be of advantage to the State, both in an educational and financial point of view.

"The Committee, however, notwithstanding an entire unanimity in these views, are united in the feeling that the present is not a propitious time for action in the premises, and therefore request to be discharged from the further consideration of the subject."

The unpropitiousness of the time had reference to the lateness in the session, and to the fact that many important bills were, as usual, being rushed through, and would inevitably push this petition to the wall. Upon the very day of the presentation of this report was passed the educational bill of 1859,* authorizing the reservation of one half the net proceeds from the sale of the Back Bay lands belonging to the State, after payment of $300,000 worth of scrip issued in 1856, to be divided as follows: To the school fund, 50 per cent; to the Museum of Comparative Zoölogy, 20 per cent; to Tufts College, 12 per cent; to Wesleyan Academy, Amherst College, and Williams College, 6 per cent each; provided that when the Museum shall have received $100,000, and the others in like proportion, the rest should go to the school fund. The only conditions laid down in this grant were, that the institutions should raise an amount equal to the State grant, by private subscription, and that Tufts, Williams, and Amherst Colleges should each maintain three free scholarships.

Notwithstanding the obvious inexpediency of legislation under such circumstances, an impression seems to have prevailed that this scheme for the promotion of popular scientific education had utterly collapsed. Appended to a printed copy of the memorial, accompanied by the Legislative Committee's report and issued by the memorialists, is found the following statement:—

"The Committee are desirous of correcting a false impression, which seems to prevail, that the plan has failed, and will state, in explanation, that it was in their opinion inexpedient to press so important a subject at the close of the session, especially as, if favorable action had been taken, the land would not be ready for occupancy this year. The committee did not expect definite action during the last session, and feel satisfied with the progress made, confident that in the ensuing year they shall be able to present an array of facts and arguments to the next Legislature that shall secure the establishment of these much needed educational institutions." (*Signed.*) Marshall P. Wilder, Geo. W. Pratt, Sam'l H. Gookin, Alfred Ordway, M. D. Ross, Alex. H. Rice, E. S. Tobey, James M. Beebe, Prof. Wm. B. Rogers, Dr. S. Cabot, Jr., Amos Binney, Dr. S. Kneeland, Jr., Chas. L. Flint, B. S. Rotch, J. D. Philbrick, *Committee.*

In this list, much enlarged from that appointed at the first

*Chap. 154, Sec. 3, Acts and Resolves of 1859.

meeting in the Rooms of the Natural History Society, appears for the first time the name of Professor Rogers, without whose controlling mind, inexhaustible patience, and undying enthusiasm, the Institute of Technology, zealous as were its other supporters, might never have been, and certainly could not have passed with safety through the dark days in store for it.

William Barton Rogers, son of Dr. Patrick Keer Rogers, Professor of Chemistry and Physics at William and Mary College, was born, Dec. 7, 1804, at Philadelphia, being the second of four brothers, all of whom were afterwards distinguished for scientific attainment. At the age of twenty-four, his father having died, Wm. Rogers succeeded to the professorship, leaving it only to accept the chair of Natural Philosophy and Geology at the University of Virginia. To the duties of this distinguished position were immediately added those of State Geologist, to which office he was appointed by the Legislature of Virginia. The immense labor of making the survey of his adopted State, extending over seven years (1835–1842), in no degree abated his enthusiasm in his professorship. Fervent in imagination, though never unfaithful to the absolute truth of nature, gifted with eloquence extraordinary in itself, and doubly so in a student of the exact sciences, he could hold the most indifferent audience spell-bound with the magic of his expositions. His students at the University of Virginia gave no perfunctory attention; they listened because they could not help it. He not only forced them, by his marvelously clear and virile presentations of scientific facts and theories, to give strictest heed to him, but he aroused for the study itself an enthusiasm which did not die with the sound of his voice. He animated the cold marble of science, kindling a life-spark which no subsequent neglect could wholly extinguish.

Much of his work was done in conjunction with one or the other of his brothers, Henry D. and Robert E. Rogers. The power of joint investigation and publication exhibited in the work of these three minds, each endowed in so unusual a degree, is not the least remarkable fact in the history of this gifted family.

In 1849, Professor Rogers married Miss Emma Savage, daughter of Dr. James Savage, of Boston; and largely because of this union, he, in 1853, resigned his professorship at the University of Virginia, and took up his residence in the city for which in the thirty years of his life there, he was to do so much.

In the period between his coming to Boston and 1859, when the Conservatory of Art and Science was first publicly proposed, Professor Rogers was active in writing and lecturing upon scientific subjects. Although his comprehensive mind interested itself in all branches of science, his attention at this time was especially turned toward Physics, to the study of which he applied himself with his wonted enthusiasm. Doubtless, too, throughout these six years, he was sowing seed in the good ground of the enlightened understanding of Boston's merchants and manufacturers—seed which was to be tended and watched over by him far beyond the limit of his physical endurance, and the full vigor and promise, if not indeed the perfect fruition, of which he lived long enough to see.

Fortunate in the alliance of his thorough scholarship, patient enthusiasm, and extraordinary personal power, but impelled no less by their own zeal than by that of Professor Rogers, the committee named above, with additional members, presented a new memorial* at the next session of the Legislature. This, which met no better fate than the first, was essentially a repetition of it, somewhat more extended, and containing minor changes. To quote the petition:—

"In conclusion, your memorialists would remark that, although the present application coincides in its general purport with the memorial (House Doc. 260) which they had the honor to submit to the General Court last winter, it embodies the more mature results of the inquiries, and deliberations in which they have since been zealously engaged."

Petitions in aid of this second memorial were presented by the Boston Society of Natural History, the Boston Board of Trade, the American Academy of Arts and Sciences, the Massachusetts Charitable Mechanic Association, and the New England Society; the endorsement of each of these distinguished bodies, representing such diverse interests, being most cordial and hearty. A favorable bill was presented, and passed the House, but was, late in the session, rejected in the Senate. Upon motion to reconsider the vote of rejection, the bill was laid upon the table.

Although many meetings, more or less formal in character, of the "Committee of Associated Institutions, of Science and Art,"

*House Doc. 13, January, 1860.

as it was now called, must have taken place during the winter of 1859–60, no record is known to exist of them, the only memorandum of the busy but silent work done at that time in furtherance of the scheme, being found in a pamphlet published in 1861,* in which the statement is made that,

"Believing that the failure of their previous appeal to the Legislature was, in part at least, due to the incompleteness and vagueness in which they had presented this department of their general plan" [Practical Instruction in the Arts and Applied Sciences], . . . "the Committee determined on taking such steps as were practicable toward the organization, in a preliminary form, of an institution of this character.

"Accordingly, at a meeting held May 28, 1860, the Committee assigned to a sub-committee, consisting of W. B. Rogers, E. B. Bigelow, J. M. Beebe, M. D. Ross, and C. H. Dalton, the duty of preparing and reporting the plan of an institution designed for the advancement of the Industrial Arts and Sciences and Practical Education in the Commonwealth."

Four months later, the sub-committee, through its chairman, issued a call for a public meeting to be held at the rooms of the Board of Trade, on October 5, 1860, and at this meeting was read the report of the Committee, outlining the plan of the Institute of Technology. The Conservatory of Arts and Sciences, with its huge collections, supplemented by instruction, is found to have given place to a school, in which the instruction is to be first, and the collections secondary, supplementary to the theoretical and practical teaching.

The pamphlet† is so clear in its exposition of the objects contemplated, its authors are so thoroughly master of the ideas and projects therein contained, that it is a temptation to transcribe it entire. A rough sketch must, however, suffice.

After reciting the benefits to be derived from institutions of the nature contemplated, especially in a cummunity, like Massachusetts, largely devoted as it is to manufactures, it says:—

"With the view of securing the great industrial and educational benefits above alluded to, it is proposed to establish, on a compre-

*An Account of the Proceedings Preliminary to the Organization of the Mass. Institute of Technology. Pph., 8vo., pp. 23. Boston, 1861.

†Objects and plan of an Institute of Technology [Prepared by direction of the Committee of Associated Institutions of Science and Arts, and addressed to Manufacturers, Merchants, Mechanics, Agriculturists, and other friends of enlightened industry in the Commonwealth]. Pph., 8vo., pp. 29. Boston, 1860; 2d ed., 1861.

hensive plan, an institution devoted to the practical arts and sciences, to be called the Massachusetts Institute of Technology having the triple organization of a Society of Arts, a Museum or Conservatory of Arts, and a School of Industrial Science and Art."

It then states, at some length, the duties of the several committees, the sub-divisions of the collections, and the departments of the school.

The development of the Society of Arts and the School of Industrial Science is sufficiently well known. The Museum of Arts needs but money and space to become an accomplished fact. The Journal, which the Committees contemplated, "besides setting forth the proceedings of the Society, and the condition and progress of the Museum and School of Industrial Science, should furnish a faithful record of the advance of the Arts and Practical Sciences at home and abroad," has never been started, for the reason, perhaps, that the first two objects are attained by the "Proceedings of the Society of Arts" and the Catalogues and President's Reports published annually, while the third aim is amply met by the multifarious scientific journals and reports continually brought forward. In relation to the School, the Report says:—

"In arranging the plan and courses of instruction, provision would be made for the two classes of persons for whose benefit they are designed,—those who enter the school with the view of a progressive systematic training in applied science, and who have the preliminary knowledge, as well as time, for a continuous prosecution of its studies; and the far more numerous class, who may be expected to resort to its lecture-rooms for such useful knowledge of scientific principles as they can acquire without methodical study, and in hours not occupied by active labor.

"The former would of necessity be subjected to classification and direction in their studies, as well as examinations and other tests of acquirement in the progress and at the close of their terms. The latter, without having access to the exercises of the classroom, would be admitted to the courses of lectures on general and applied science, subject only to the conditions and restraints that are usual in public lectures generally." . . .

"In regard to the latter feature of the School we may remark, that as the system of merely popular lecturing in its usual form would be inconsistent with the grave practical purposes which we have in view, it could not be recognized in connection with our plan." . . .

"In the features of the plan here sketched, it will be apparent that the educaton which we seek to provide, although eminently practical in its aims, has no affinity with that instruction in mere *empirical routine* which has sometimes been vaunted as the proper education for the industrial classes. We believe, on the contrary, that the most truly practical education, even in an industrial point of view, is one founded on a thorough knowledge of scientific laws and principles, and which unites with habits of close observation and exact reasoning a large general cultivation. We believe that the highest grade of scientific culture would not be too high as a preparation for the labors of the mechanic and manufacturer. . . .

"But such complete and comprehensive training can, in the nature of things, be accessible to only comparatively few; while the limited and special education which our plan proposes would, we hope, fall within the reach of a large number whom the scantiness of time, means, and opportunity would exclude from the great seats of classical and scientific education in the Commonwealth."

"It will thus be seen, from the peculiar character and objects of this Department of the Institute, that it could not interfere with the interests of the established schools of learning devoted to general literary and scientific education."

The "Object and Plan" was distributed widely through the State of Massachusetts, accompanied by a circular asking the attention and coöperation of those receiving it. Two months later followed another circular, announcing a meeting to be held in Mercantile Hall, 16 Summer Street, on the evening of Jan. 11, 1861, "for the purpose of adopting measures preliminary to the organization of the Institute, and in furtherance of a petition to the Legislature for a charter, and a portion of the Back Bay lands."

This meeting was largely attended, addresses being delivered by Prof. Benjamin Peirce, the Rev. Dr. Gannett, and others, and formal resolutions were passed associating the subscribers for the purpose of endeavoring to organize and establish "The Massachusetts Institute of Technology," and appointing a committee of twenty to act in coöperation with the Committee of Associated Institutions of Science and Arts, to promote the incorporation of the Massachusetts Institute of Technology, and frame a constitution and by-laws for the government of the said Institute when it shall be established.

The third memorial was, in January, 1861, properly presented to the General Court, and by them referred to a Joint Standing Committee of the Legislature. This Committee made, on March

19, 1861, a report* entirely favorable to the grant, ". . . Believing the objects of this Institution to be of the highest moment to the material and educational progress of the State," . . . "and believing that the public advantages contemplated in the plans proposed would be wisely purchased by a share of the direct bounty of the Commonwealth."

"Such, however," the report of the Committee goes on to say, "is not the kind of aid craved by the petitioners. The land for which they apply has already indirectly and in part, at least, been dedicated to public education. They do not propose to withdraw it from this object but, on the contrary, to give it a new and vastly increased value for educational purposes," . . . "and your Committee are in favor of granting the prayer of the memorialists to the extent and according to the conditions of the following bill." Then follows the Act of Incorporation.†

The report of the Committee being accepted in the House, we find that on March 21st the bill proposed was passed to a third reading by a vote of 89 to 33. On the next day a motion to reconsider was made, but did not prevail, and upon the 25th the bill, with the addition of sections 9 and 10, as amendments, was, by the House, ordered to be engrossed; and upon the 29th the same action was taken by the Senate.

Upon April 10, 1861, more than two years after the subject was first publicly agitated, two years of almost constant effort in the face of opposition and discouragement, at an hour when the thoughts of the people were turned more toward impending war than in the direction of measures pre-supposing conditions of domestic peace and well-being, was legally established, by the approving signature of John A. Andrew, Governor of the Commonwealth, the Massachusetts Institute of Technology, in the terms of the following:—

Act‡ to incorporate the Massachusetts Institute of Technology, and to grant aid to said Institute, and to the Boston Society of Natural History.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows:

SECTION 1. William B. Rogers, James M. Beebe, E. S. Tobey,

*House Doc. 171, 1861. †Section 1–8 only. ‡Chap. 183, Acts and Resolves of 1861.

S. H. Gookin, E. B. Bigelow, M. D. Ross, J. D. Philbrick, F. H. Storer, J. D. Runkle, C. H. Dalton, J. B. Francis, J. C. Hoadley, M. P. Wilder, C. L. Flint, Thomas Rice, John Chase, J. P. Robinson, F. W. Lincoln, Jr., Thomas Aspinwall, J. A. Dupee, E. C. Cabot, their associates and successors, are hereby made a body corporate, by the name of the Massachusetts Institute of Technology, for the purpose of instituting and maintaining a society of arts, a museum of arts, and a school of industrial science, and aiding generally, by suitable means, the advancement, development, and practical application of science in connection with arts, agriculture, manufactures, and commerce, with all the powers and privileges, and subject to all the duties, restrictions and liabilities, set forth in the sixty-eighth chapter of the General Statutes.

SEC. 2. [Relates to holding of estate.]

SEC. 3. [Specifies the lot of land to be reserved.]

SEC. 4. If at any time within one year after the passage of this act, the said Institute of Technology shall furnish satisfactory evidence to the Governor and Council that it is duly organized under the aforesaid charter, and has funds subscribed or otherwise guaranteed, for the prosecution of its objects, to an amount at least of one hundred thousand dollars, it shall be entitled to a perpetual right to hold, occupy, and control, for the purposes hereinbefore mentioned, the westerly portion of said second square to the extent of two third parts thereof, free of rent or charge by the Commonwealth, subject, nevertheless, to the following stipulations, namely: persons from all parts of the Commonwealth shall be alike eligible as members of said Institute, or as pupils for its instruction, and its museum or conservatory of arts, at all reasonable times, and under reasonable regulations, shall be open to the public; and within two years from the time when said land is placed at its disposal for occupation, filled and graded, said Institute shall erect and complete a building suitable to its said purposes, appropriately inclose, adorn, and cultivate the open ground around said building, and shall hereafter keep said grounds and building in a sightly condition.

SEC. 5. [Relates exclusively to the Boston Society of Natural History.]

SEC. 6. [Relates to forfeiture of grounds and buildings in the event of non-compliance with conditions specified above.]

SEC. 7. The above-named societies shall not cover with their buildings more than one third of the area granted to them respectively.

SEC. 8. The Commissioners are hereby instructed to reserve from sale the lots fronting on said square on Boylston, Clarendon, and Newbury Streets, until said societies shall, by inclosure and improvements, put said square in a sightly and attractive condition.

SEC. 9.* Upon the passage of this act, the Governor, with the

*Amendments to original bill.

advice and consent of the Council, shall appoint three disinterested persons, who shall appraise the value of all the lands specified in the third and eighth sections of this act, and make a return of said appraisal to the Governor and Council; and if when the lands mentioned in section eight shall have been sold, the proceeds of such sales shall not be equal to the whole amount of the appraisal above mentioned, then the societies named in this act shall pay the amount of such deficit into the treasury of the Commonwealth, for the school fund, in proportion to the area granted to them respectively.

SEC. 10.* This act shall be null and void unless its provisions shall be accepted within one year, by the Massachusetts Institute of Technology and the Boston Society of Natural History, so far as they apply to those societies respectively.

A House for the Cosmopolitan Club.

There is a movement on foot among the members of the Cosmopolitan Club at the Institute to secure a suitable club house, as the suite of rooms now occupied is altogether too small for the purpose. The aim is to secure a house large enough so that there will be ample room for club accommodations, and also rooms for transient or permanent guests.

Undergraduates to Celebrate the Fiftieth Anniversary

The Electrical Engineering Society is planning for Wednesday, April 12, a joint professional society banquet in which all the members of the professional associations connected with the Institute are invited to assist. Several hundred have already expressed their intention of being present at this feature of Technology's semi-centennial. President Maclaurin will be there and will address the students, who have invited for the chief speaker, Frank J. Sprague of New York, consulting engineer, who has attracted attention recently through his proposition to the Public Service Commission of his city for the construction and financing of a $75,000,000 subway. In May the society will have its final banquet for the year, and at this Prof. Elihu Thompson will be the speaker.

*Amendments to original bill.

THE PIONEER OF INDUSTRIAL EDUCATION

The direct Influence of the Institute of Technology on a branch of education now receiving much consideration

The REVIEW is indebted to *Advance New England* for advance proof of Mr. Munroe's article which we reproduce by permission:

Although its charter was not granted until April, 1861, the Massachusetts Institute of Technology really was conceived in 1846, when the then trustee of the Lowell Institute, Mr. John Amory Lowell, asked Professor Henry D. Rogers of the University of Pennsylvania, and Prof. William B. Rogers (afterwards president of the Institute) of the University of Virginia, to help him draw up a plan for evening classes, under which it would be feasible "to teach the operative classes of society,—builders, engineers, practical chemists, manufacturers, etc." The terms of the Lowell bequest were such as to forbid the creation of a school under its auspices; but from that early day Prof. William Rogers cherished the unfaltering hope of creating in Boston a school which should not only educate for the engineering profession, but which should "provide courses of evening instruction in the main branches of knowledge, for persons of either sex who are prevented, by occupation or other causes, from devoting themselves to scientific study during the day, but who desire to avail themselves of systematic evening lessons or lectures."

In this hope he was encouraged by many of the far-seeing merchants and manufacturers of the city, and in 1859 was launched a project for a "Conservatory of Art, Science and Historical Relics," to occupy four squares of the then unfilled Back Bay lands, and to provide higher scientific education as well as exact technical training for the people of the Commonwealth. Various exigencies, political, personal and financial, unfortunately reduced the proposed four squares of land to one. Moreover, for some years after its opening in 1865, the Institute was forced to concentrate its efforts upon the instruction, in day classes, of students of college age aiming to be leaders in applied science, rather than

upon the giving of general industrial training to mechanics and artisans.

Nevertheless, the needs of that important body of citizens were not forgotten, and with the aid of funds supplied by the Lowell Institute, Technology maintained for many years free evening courses, given by its instructing staff, in drawing, mathematics and many branches of pure and applied science. These courses finally developed into the Lowell Free School for Industrial Foremen, wherein two-year evening courses in mechanical engineering and in electrical engineering are given by members of the teaching staff of the Institute, in the laboratories and drawing rooms of the school, and with standards of attainment comparable to those within the Institute itself.

Valuable as those evening lectures were and this succeeding School for Foremen is, they form but one of the contributions of the Institute of Technology to the development of industrial education. In at least three other ways has the school been of extraordinary service in his special direction: first, through the establishing of the laboratory method in teaching; second, through the creation of the School of Mechanics Arts; and third, through the work of many of its faculty and alumni, as individuals, in arousing public interest in this type of education upon which the ecomonic future of the United States in large degree depends.

We are so accustomed to the use of the laboratory, even in high schools, in teaching chemistry, physics, etc., that it is difficult to realize that less than fifty years ago, all instruction, even in science, was given wholly from the text-book with perhaps the occasional performing of an experiment, before the class, by the instructor. When the Institute opened its doors to students, in February, 1865, it offered, therefore, the first opportunity in the world for young men, as members of a class, to perform by themselves, in a properly equipped laboratory, experiments in chemistry given in the text-book or suggested by the teacher. Moreover, it almost immediately extended the principle of laboratory instruction to the teaching of physics,—being a pioneer also in that—and, later, to the giving of instruction in mining and metallurgy, in steam engineering, and in the testing of materials, through individual work by the students in laboratories where, as far as possible, the actual conditions of the industry are duplicated.

This pioneer work was indispensable, of course, to the develop-

ment of industrial education; for the very foundation of that type of education in that study and practice shall go hand in hand, that a pupil shall learn how things are made through actually making those things himself. Had the Institute not demonstrated the value of laboratory teaching in the training of the engineer, chemist and biologist, it would have been difficult even to conceive the idea of training those who are to enter the industries, through actual work in what are called shops, but which are really mechanical laboratories.

Not satisfied, however, with this somewhat indirect contribution to the development of industrial education, the Institute of Technology conducted for nearly ten years a direct object-lesson in the value of what lies in the basis of all industrial education,—manual training. Impressed by the exhibit made at the Centennial Exposition, at Philadelphia, by the Russian government, of the work of its manual training schools, Professor Runkle, at that time president of the Institute, established, in connection with it, a school of Mechanic Arts. In that school young men of high school age were given a two-year course in carpentry, turning, forging and bench-work, together with the usual English, mathematics, etc., or the ordinary secondary curriculum. So fully did this, and a similar school started by Professor Woodward at St. Louis shortly afterward, commend themselves to the teachers of the country, that is was not long before every leading city in most of the states had something in the nature of a school of mechanic arts. Out of this widespread recognition of the value of manual training has grown a demand for something still more comprehensive and practical, something that shall bear more directly than manual training can upon the needs of the rapidly developing industries of the United States.

In creating this demand, and in helping to formulate the methods through which that demand can best be met, the officers, teaches, and alumni of the Institute have been conspicuous. The important part taken by President Runkle has already been referred to. President Walker was no less active in calling attention to the inadequacy of the old school methods to modern demands, and his papers and addresses, collected after his death into a volume, "Discussions in Education," were epoch-making in their effect upon the development of undustrial education. Moreover, when, in 1906, the National Society for the Promotion of Industrial

Education was formed, President Pritchett, of the Institute, was its first executive; and of the four presidents elected since, two have been graduates of Technology. Many members of the teaching staff of the Institute have been prominent workers for industrial education, and all over the country are to be found Technology men, as engineers, manufacturers or teachers, who are leaders in developing, in their communities, types of industrial education which shall most nearly meet, on the one hand, the demand or industry for well-trained workmen, and, on the other hand, the needs of great numbers of young men and young women for an education that shall really develop them industrially, mentally and morally.

Had the Massachusetts Institute of Technology done nothing in the training of those scientists, engineers, chemists, sanitarians, architects and teachers who, by their efforts have brought money and well-being beyond all power of reckoning to the people of the Commonwealth and of the country as a whole, it would still deserve much of Massachusetts for the part it has played in giving her recognized leadership in the present momentous developments in industrial education.

JAMES PHINNEY MUNROE, '82.

Mr. Munroe reported informally for the Alumni Fund and the Life Membership Fund. These funds are taken over by the Committee on Permanent Funds.

The Status of Associate Members

As was stated in the March REVIEW a special meeting of the Alumni Council was called by request to reconsider the previous action of the council recommending that there be no distinction between graduates and non-graduates in the membership of the Alumni Association. After an interesting discussion of the matter a vote was finally taken in which the previous action of the council was endorsed by a large majority. Ballots are now going out to the membership. The result will be announced in the May REVIEW.

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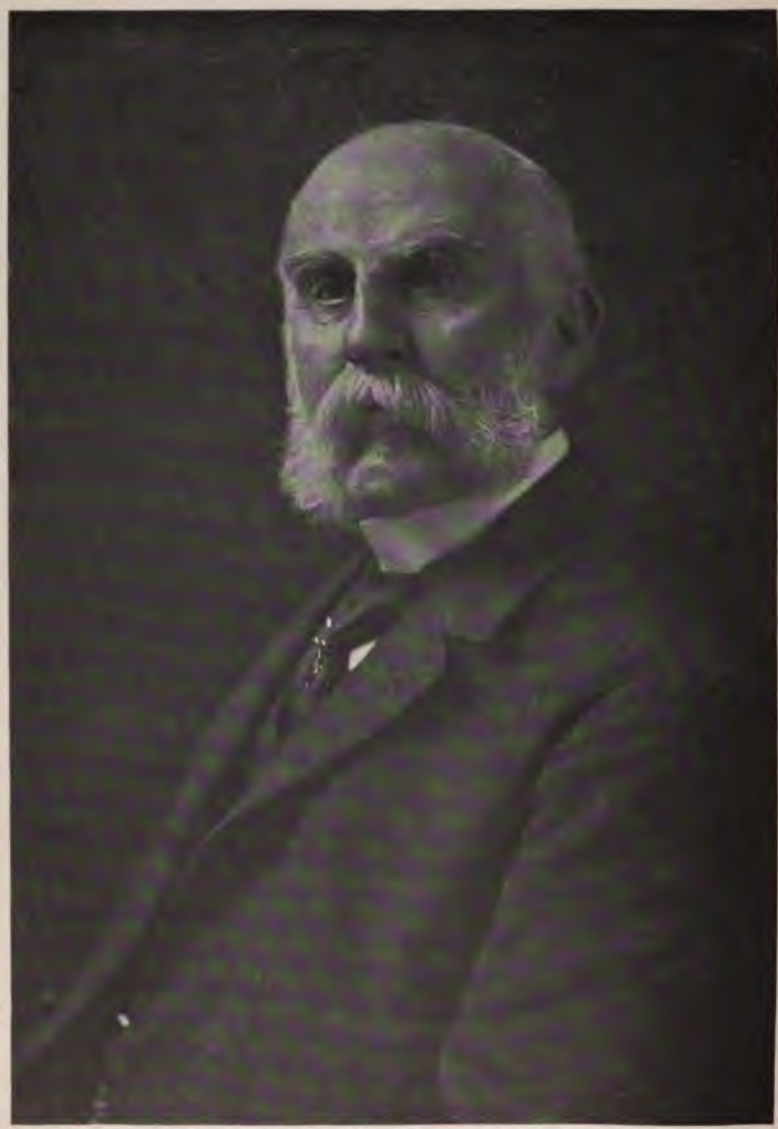

PROFESSOR GEORGE A. OSBORNE

GEORGE A. OSBORNE

The only remaining member of the original faculty—Professor Emeritus after forty-five years of continuous service

The recent retirement of Professor Osborne emphasizes once more the fact that no age limit can be placed upon productive mental activity. Happily the subject of this brief sketch is still too close to us for formal expression in regard to the value of his work to be made. Some words of appreciation, however, may not be out of place.

The length of his service is, in itself, a striking lesson in efficiency,—a lesson such as few lives afford. The transmission of knowledge is not effected without wear upon the human machine. Mind and body must be well adjusted to withstand the strain of continuous output. But the highest reward of teaching,—the privilege of inspiring and directing young minds which are aglow with virility and buoyant with the enthusiasms of early manhood,—accrues in exceptional measure to such a career.

Many may exert a powerful influence upon more than one generation of men. It is a rarer opportunity to be able to impress one's ideals upon picked groups of those to whom by natural selection falls the heavy task of developing the scientific and industrial activities of a nation. But to share in a great adventure of faith, to labor at the foundation of technical education, and to be a part of its noble growth,—this is a unique experience.

Professor Osborne was graduated from the Lawrence Scientific School in 1860. Several years were spent at the Naval Academy in Annapolis as a member of the instructing staff. In 1866 he was called to become a member of that devoted company which the honored founder of Technology gathered about him for his great experiment in education. Since then his life has been merged in the life of the Institute. From 1868 to 1871 he served as secretary to the Faculty. In 1870 came the appointment as Professor of Mathematics, and in 1903 the Walker Professorship was

conferred. The ripe experience of many years of teaching found expression in 1891 in his Differential and Integral Calculus,—a text book which won an immediate and lasting success. During 1906 Professor Osborne was absent most of the year owing to ill-health, and on his return in 1907 was relieved of half his former work. In 1910 he was made Professor Emeritus, but at his own desire continued to retain an active though limited share in the regular work of instruction in mathematics.

It was the writer's fortune as a student to attend but one of Professor Osborne's classes. Nevertheless, after more than twenty years, he retains a vivid impression of a broad-minded, sympathetic personality; of a man whose horizon was not bounded by the narrow walls of a class-room. Untiring in his zeal for his subject, this teacher carried the impress of a practical mind—the evidence of contact with the real business of life—which gained for him not alone the hearty respect of his students, but the cordial fellowship of men of affairs.

His clearness of exposition was positively luminous. Alas! that the glow so soon faded when the student took crayon in his turn. His presentation was never interrupted by excursions to the mysterious realm of infinity whither another beloved professor sometimes soared, to the delight and wonder and—shall I say it? to the but partial comprehension of at least some of the class.

Few widely-read teachers have in equal degree the concentration which characterized Professor Osborne's teaching in those happy days; the confining of discussion to the real business at issue; the precise knowledge of how much help a student needed to solve the problem in hand. He knew minds as he knew books, and read them with the same ease and sympathy and just appraisal. It is precisely these qualities of clearness, concentration and helpfulness that shine from the pages of his text.

Suggestiveness, too, characterized his thought. Turning from the steps of Rogers one bright winter day, he casually referred to the low altitude of the sun. In hardly more than a single sentence he suggested the effect of latitude upon human life, the dim light of the London sky in winter, the shaded valleys of northern Europe. Again, it was a word on overheated railway trains—the dessication produced by warming winter air to a temperature of 75° or 80° F.—a veritable Sahara air which modern engineering has not yet rendered decently humid. These incidents may seem

too slight to be worth recording, but to his hearer they revealed something of the man.

Fineness of substance alone can give endurance under long repeated stress. The links of the chain which bind us to the beginnings of Technology are few. They wear brighter if thinner with the passing years. We are grateful that they still hold fast.

FRANK M. GREENLAW, '90.

The M. I. T. in Hawaii

On top of this paper's advocacy of making the Kilauea volcanic region a national park comes the news that the volcano observatory at the brink of the crater is now assured of erection in the immediate future. Besides its being a great attraction of itself, this enterprise of the Massachusetts Institute of Technology will be an interesting adjunct of Kilauea national park.—*Hawaiian Star.*

Meeting of Cotton Manufacturers

The ninetieth annual meeting of the National Cotton Manufacturers has been appointed for April 12 and 13, in order that it may follow the Congress of Technology which will attract many manufacturers to Boston. It will be held at the Massachusetts Institute of Technology. President Maclaurin will speak at the opening session.

New Associate Members

The following former students were elected associate members of the Alumni Association on the date indicated:

February 20, 1911: John Brown, '00; Allen Curtis, '10; William J. G. Dew, '10; Matthew F. Durgin, '09; Herbert S. Gott, '10; Hamilton A. Higbie, '10; Hubert O. Jenkins, '09; John Eben Kreps, '87; Hugh Kelsea Moore, '97; Ernest L. Patch, '10; Ralph T. Regnell, '08; Tom W. Saul, '10; Robert B. Todd, '08.

AGE OF SCHOOLS OF APPLIED SCIENCE

The following is a list of schools of applied science at the present time with the dates of their foundation. Purely agricultural colleges and military schools have been omitted from this list.

Institution.	*Founded.*	*Address.*
Rensselaer Polytechnic Institute	1824	Troy, N. Y.
Massachusetts Institute of Technology	1861	Boston, Mass.
New Hampshire College of Agriculture and Mechanic Arts	1863	Durham, N. H.
Worcester Polytechnic Institute	1865	Worcester, Mass.
Iowa College of Agriculture and Mechanic Arts	1868	Ames, Iowa.
Purdue University	1869	Lafayette, Ind.
Alcorn Agricultural and Mechanical College	1871	Alcorn, Miss.
Stevens Institute of Technology	1871	Hoboken, N. J.
Alabama Polytechnic Institute	1872	Auburn, Ala.
Virginia Agricultural and Mechanical College and Polytechnic Institute	1872	Blacksburg, Va.
State School of Mines	1874	Golden, Col.
Agricultural and Mechanical College of Texas	1876	College Station, Tex.
Mississippi Agricultural and Mechanical College	1880	Agricultural College, Miss.
Case School of Applied Science	1881	Cleveland, Ohio.
Rose Polytechnic Institute	1883	Terre Haute, Ind.
Michigan College of Mines	1885	Houghton, Mich.
State School of Mines	1885	Rapid City, S. D.
State School of Technology	1888	Atlanta, Ga.
Montana State School of Mines	1889	Butte, Mont.
New Mexico College of Agriculture and Mechanic Arts	1889	Mesilla Park, N. M.
North Carolina College of Agriculture and Mechanic Arts	1889	West Raleigh, N. C.
New Mexico School of Mines	1891	Socorro, N. M.
Rhode Island College of Agriculture and Mechanic Arts	1892	Kingston, R. I.
State College of Washington	1892	Pullman, Wash.
Montana College of Agriculture and Mechanic Arts	1893	Bozeman, Mont.
Armour Institute of Technology	1893	Chicago, Ill.
Clarkson School of Technology	1896	Potsdam, N. Y.
Oklahoma Agricultural and Mechanical College		Stillwater, Okla.

TECH DINNER IN CANAL ZONE

Visiting Institute Engineers Join Local Alumni and Toast Alma Mater

Tech members of the party of "American Society of Civil Engineers" which recently made an inspection trip to the Canal Zone seized this opportunity to celebrate, on the evening of March 14, with an informal Tropical Tech Reunion.

Preparatory to deliberations on the fate of the Institute, the inner man was served with an excellent dinner at Hotel Tivoli, Ancon, to which the following alumni did ample justice: Charles T. Main, '76, Boston; J. W. Rollins, '78, Boston; William E. Mott, '89, Carnegie Technical Schools, Pittsburg; Morris Knowles, '91, Pittsburg; Frank A. Browne, '06, Culebra, Canal Zone; F. P. McKibben, '94, South Bethlehem, Pa.; Hewitt Crosby, '03, New York City; Charles R. Main, '09, Boston; J. H. Flynn, '05, Gorgona, Canal Zone; William W. Lewis, '89, Hyde Park, Mass.; Frank H. Page, '85, Springfield, Mass.; G. S. Witmer, '09, Corozal, Canal Zone; A. S. Bell, '06, Culebra, Canal Zone; H. W. Ballou, '97, Providence, R. I.; A. L. Davis, '06, Cristobal, Canal Zone; Sidney K. Clapp, '95, Board of Water Supply, Brown Station, N.Y.; H. S. Morse, '03, Louisville, Ky. A rousing M. I. T. cheer which inaugurated proceedings caused the Panamanians to sit up and take notice and as a matter of fact was the real cause for the mobilization of troops on the Mexican frontier.

After the dinner, adjournment was made to the Sun Room of the hotel. Mr. Main gave a "resume" of conditions and progress of Institute affairs, emphasizing the important part which the Alumni Association is taking in these affairs and dwelling particularly on the question of a new site for the Institute. Mr. Rollins sketched the work of the committee of the Alumni Association in securing increased financial assistance for the Institute from the State of Massachusetts and spoke feelingly of the deep and generous interest which the alumni have in the Institute. Mr. Page was called upon to present the details of the proposal emanating

from Springfield for the moving of the Institute to that city. He responded ably, picturing the proposed site for the Institute on the banks of the Connecticut River in glowing terms, noted the advantages of Springfield as a university city and especially called attention to the fact that residents of Springfield appreciate the worth of the Institute sufficiently to assist materially in a financial way—an appreciation which residents in and around Boston keep carefully smothered. While a majority of those present, as a general proposition, favor a Boston site for the Institute, the fact was admitted that sentiment is the principal reason for this preference and it was generally agreed upon that the Springfield offer is worthy of serious consideration. Professor McKibben cited conditions and experiences of several other educational institutions with reference to grounds, buildings and equipment and expressed the hope that the site finally chosen for the Institute will be sufficient not only for the advancement expected within the next fifty years, but adequate for an indefinite period. He stated specifically his opinion that the site should be of an area not less than one hundred acres. This portion of our reunion was intensely interesting, as all realized that the subjects under discussion are vital and that the affairs of the Institute are at a crisis.

Several of the more youthful alumni, including Mr. Page, continued the reunion at the rooms of the University Club in Panama where work on the canal, life in the tropics and less serious subjects were fittingly dealt with. The gathering broke up some time or other with the enthusiastic announcement in the Plaza Cathedral that "We are Happy," *et cetera.*

All visiting Tech men joined in hearty appreciation of the hospitality and courtesy of brother alumni and all officials on the Canal Zone and expressed unqualified approval of the manner in which work is being done on the Canal.

The Harvard Aëronautical Society will hold a glider meet at their aviation field, Atlantic, Mass., May 4, 5, 6. A number of college gliders have been entered, among them that of the Technology Aëro Club.

THE SEASON'S ATHLETIC RECORD

Undergraduates keep up their reputation in Track Work—Other departments make creditable showing

The undergraduate athletic record during the past season has been a very creditable one, especially in the running events. In the report of the New York Athletic Club meet, February 19, the *Boston Herald* states that the Tech relay team is the best it ever had. The games were held at the Madison Square Garden, February 18, and the relay team brought its season to a very successful close by winning the intercollegiate relay championship. In its account of the event the *Herald* says:

> The greatest achievement at the New York A. C. games was accomplished by the Massachusetts Institute of Technology relay team. To triumph over two such clever aggregations as Cornell and Syracuse was hardly expected, but it proved that Frank M. Kanaly has developed the speediest quartet in the history of the institution. R. C. Thompson, P. D. White, T. H. Guething and W. C. Salisbury created much favorable comment by their victory. Cornell led up to the last relay, when Capt. Salisbury uncovered a magnificent burst of speed which carried him to victory over the Ithacans, and many yards in advance of Reidpath, Syracuse's intercollegiate champion quartermiler.

At the annual indoor games at the gymnasium no records were broken, but the competition was keen in all the events. The seniors won the meet, the juniors coming next with seven points less.

The South Boston Athletic Club games were held during the mid-year examinations, but there were enough Tech men entered to carry away four prizes. At the Armory athletic games, Providence, January 25, the Tech one and two-mile relay teams ran against the respective teams of Harvard and made an even break with the University. Harvard won the two-mile race and Tech won the one-mile event. The latter was an extremely close race; the time was 2.45 2-5, and a record for the distance,—four-fifths of a mile. At these games Benson, '12, won the thousand-yard handicap race in the remarkable time of 2.13 2-5.

In the dual meet between the freshmen and sophomores, February 14, the freshmen easily won.

The one-mile relay team again won a victory at the Boston Athletic Association meet of February 11, when they defeated Dartmouth the second time in two years in the fast time of 3.09 1-5 which is the M. I. T. record for the distance.

The Massachusetts Coast Artillery indoor games of February 18, drew most of the men who were not on a relay team or on the freshman track team. Wilson, a freshman, won for Tech in the 75-yard handicap and two other places were taken by Tech men.

In the meet between the freshmen and the Brookline High School, Brookline won by two thirds of a point. Tech would have won the meet if Geuthing, '14, had not been running in New York at the time.

The last competition of the season was at Troy, N. Y. The mile relay team was matched against the crack Cornell aggregation and was clearly outclassed when Cornell set the remarkable pace of 8.13 2-5 for the distance. Neither of the teams came out victorious, but they were matched against the best teams the country can produce, and it was the first attempt to develop two Technology distance teams in order that more men may be encouraged to come out for the sport.

The hockey team has done creditable work during the past season. It has been greatly helped because of the opportunity for practice in the new Boston Arena skating rink even if the hours have been short. The first game was played December 3 in the Arena against the Boston Crescents, who have been the champions of Boston for two years. The game was close and exciting, Tech winning by a score of 7 to 6.

On December 7 the crack Boston Hockey Club whitewashed Tech, the final score being 8 to 0.

The first college game was played with Harvard, December 14, and was fiercely contested. Tech scored first, but the first half closed 3 to 1 in favor of Harvard. Tech made a plucky rally in the second half but was stopped by the great defensive work of the Crimson. Harvard won by a score of 4 to 3.

Although the team was somewhat broken up after the holidays, it put up a fine game against Dartmouth, winning by a score of 3 to 1. This makes four consecutive hockey victories over Dartmouth.

On January 6 and 7 the team played two games at Albany, N.Y., against the Louden Field Club. The rink was a very small one

and the Tech men did not get used to it in time to prevent defeat. The score was 8 to 5 against Tech. The next evening, however, Tech won over the same club by a score of 5 to 4. On January 26 the team played the Massachusetts Agricultural College on soft ice and won by a score of 4 to 3. Tech is one of the two college teams that has won from the Massachusetts Agricultural College this year.

The trip to Providence on February 11 ended disastrously for Technology. The Providence club won after a strenuous game by a score of 12 to 6.

Williams was completely outclassed by Tech in the Boston Arena on February 16, when she was defeated by a score of 12 to 3.

The last game of the season was played at the Arena, February 24, against the Crescents of Halifax, whose members are men picked from the best teams in that section of Canada. Tech fought hard and lead at the end of the first half by 3 to 0. The men, however, could not keep up this pace in the second half, and the speedy Canadians won the game by 6 to 4.

The team has had three managers during the season, which is in itself something of a handicap. But one college game was lost, that of Harvard at the first of the season, by a close score. The individual work of the team has been of a high order, and the team work has been excellent. It has fairly earned the reputation of being one of the best college teams in the East.

The basket-ball season began with a very good outlook. All but two of last year's team returned to the Institute and a large number of candidates came out for the team. In order to add to the interest a second team was formed with an entirely separate organization. While this latter team has not met with great success, some very good individual players have been developed who ought to make good material for the 'Varsity next year.

The first game was a victory over Boston College after which the team went to New York for the Christmas vacation. Notwithstanding the absence of two men, the Brooklyn Polytechnic team was defeated in a close hard game. The next night the Tech team was defeated by the College of the City of New York, chiefly through inability to score, the guarding being at all times extremely good on both sides. The third game was lost to Dartmouth at Hanover in the last few minutes of play, but this was

followed by a victory over Brown shortly afterward. The team then went West for a series with Syracuse, Rensselaer Polytechnic Institute at Troy, and Union College at Schenectady, but was beaten each time because of poor team work and loose guarding. The games with Syracuse and Rensselaer were very close, but Union College had a better team, and was in superior physical condition.

At the beginning of the second term Tech was defeated by Williams in a game with many curious features, Tech being completely outclassed in the first half and actually outscoring the home team in the second half. Tech then defeated Tufts, and later on Brown turned the tables by winning a victory at Providence. The next game, which was with Wesleyan, resulted in a defeat, but it was the best played game of the season and against an opposing team which is conceded to be the fastest in New England and which was forced to its very top speed. The hard fight put up against Wesleyan left the team in poor condition to meet Dartmouth the next day. The game was a rather poor exhibition of basket-ball and Tech was completely overwhelmed by the men from Hanover. The last game of the season was a victory over Tufts, making a total of five victories and nine defeats.

The results of the season can hardly be termed brilliant. The victories won were almost entirely due to excellent individual playing and it will be useless to hope for consistent results until it is possible to employ a permanent coach and have at least half a dozen games at the home gymnasium.

During the season a swimming team was formed which practised at the Y. M. C. A. tank. This branch of sport was not officially recognized by the athletic association until the latter part of February, too late to arrange for meets this season.

The statement made by an undergraduate in regard to the Tech crew is as follows: "Of the money subscribed last year by the northwestern alumni about $80 remains. The captain estimates that $400 will be necessary to operate the navy this season. The management finds the alumni reticent about donations chiefly because no information has been given out as to whether the new site will be near enough to the water to make the crew a permanent part of Institute athletics. It, therefore, seems as though the crew will have to discontinue during this season at least."

GROWING STRENGTH OF LOCAL ASSOCIATIONS

Interest in the Five Technology Clubs on the Pacific Coast thoroughly alive—Northern Ohio Club has enthusiastic dinner—Washington dinner, April 17

TECHNOLOGY CLUB OF BOSTON.—Eight club evenings have been held to date including two "Ladies' Nights." The season opened as it has for the last two years with a talk by the club's unofficial traveler, S. K. Humphrey, '98. This year's journey was to Spain via the Azores. The titles of some of the other talks will give an idea of the diversity of the season's program: Louis K. Rourke, '95, Boston's Commissioner of Public Works, spoke on "Experiences in Spanish America and in the Canal Zone." Rev. W. M. Partridge, '96, talked of "Alaska, the Land of Promise." Mr. Ernest Harold Baynes told in a delightful way of "Our Wild Neighbors." The club was very fortunate in having as one of its speakers Capt. Robert Bartlett of North Pole fame, who talked of his hunting experiences and adventures in the Arctic with Rainy and Whitney. The next talk was by one of our own members, Selskar Gunn, '05, who told in a witty way of the "Trials and Experiences of a Health Officer." On the seventh evening Prof. Charles E. Fay of Tufts showed a large number of mountain pictures, most of which were from the wonderful collection of Vittoria Sella, the photographer who has accompanied the Duke of Abruzzi on most of his expeditions. The following smoke talk was also a mountaineer's account of "Tyrol and the Tyrolese, Mountain Climbing and Chamois Hunting in the Dolomites." The speaker was Dr. William Lord Smith. Our president, W. L. Underwood, '98, has promised us several more good talks before the season closes.

The membership campaign in the fall lengthened our list of residents and under-graduates but there is still plenty of room at 83 Newbury Street and application blanks are readily available. *—Dr. Robert S. Williams, '02, Secretary, 83 Newbury Street, Boston, Mass.*

Massachusetts Institute of Technology Women's Association.—The Women's Association of the Institute held its eleventh annual meeting and luncheon in the Margaret Cheney Room, Saturday, January 7, 1911, with eighty-nine present. The business meeting was called to order by Miss Matilda A. Fraser at 11.30, and reports from the secretary, treasurer, registration committee, students' aid committee and nominating committee were read and approved: The officers for 1911–12 are as follows: Permanent president, Ellen H. Richards, '73; first vice-president, Margaret E. Dodd, '92; second vice-president, Laura S. Plummer, '03; recording secretary, Elizabeth B. Babcock, '09; corresponding secretary, Mildred E. Blodgett, '07; treasurer, Annie E. Allen, '94; auditor, Miss Edith A. Beckler, '02. Immediately after the business meeting luncheon was served in the private dining room of the Technology Union. This was arranged as a special tribute to our honored president, Dr. Ellen H. Richards, who has devoted so much of her life to technology and science. Each one present received a little booklet in red and gray, containing a late portrait of Mrs. Richards in her doctor's cap and gown, and various extracts from her writings. This was compiled and presented by Miss Frances Stern and Miss Isabel F. Hyams, '88.

After the luncheon some very interesting and inspiring speeches were made, each of which dwelt upon some phase of Mrs. Richards' work. Professor Talbot, '85, spoke as a Technology graduate and her co-worker. He traced her connection with the Institute after her graduation from Vassar, emphasizing particularly her zeal in building up the course in air and water analysis, her own and Professor Richards' great interest in their students and her important work for the state in the analysis of water supplies. A letter was read from Mr. and Mrs. Dewey entitled "Home Economics in the Making." Their tribute may be summed up in the closing sentence,—"When the history of this great Home Economics movement is written, the name which will stand easily first in recognizing the need, organizing the work and shaping the policies will be that of Ellen H. Richards." Miss Mary Barrows of the Home Economics Publishing House, spoke of Mrs. Richards' many books, Miss Louise Foster responded for Smith College, Miss A. H. Barus represented the Association of Collegiate Alumnæ; Mrs. Kate Ganet Wells; Mr. James P. Munroe,

'82, an alumnus, and President Maclaurin each paid fitting tribute to her extensive and many-sided interests.

No one can realize better than the women students the devotion of Mrs. Richards to high ideals in education and science, and in the application of them to human living. Generous and helpful as each one of the Faculty has always been, it is to Mrs. Richards that they peculiarly owe their opportunity for study at the Institute. Her own scientific achievements and scholarly work have held up a high standard, while her unfailing kindness has aided in personal ways that have met the need of individual students. As a token of their regard for Mrs. Richards and appreciation of her scientific work, she was presented by Miss Susan Minns with $1,078, from former women students. This sum is to form the nucleus of a permanent fund to be used for chemical research, in any way she may choose. It is earnestly hoped that many friends of Mrs. Richards and the Institute, both men and women, will help to make the Ellen H. Richards' Research Fund of valuable service to science.

In a short speech of thanks to the women of the Institute for their good-will, Mrs. Richards then took the opportunity to describe her experience when receiving the honorary degree of Doctor of Science at Doctor Burton's inauguration as president of Smith College on October 5, 1910.

Among the guests at the luncheon were President and Mrs. Richard C. Maclaurin, Mrs. William Barton Rogers, Mrs. Francis A. Walker, Mrs. James M. Crafts, Prof. Robert H. Richards, Prof. and Mrs. Henry P. Talbot, Mr. and Mrs. James P. Munroe, Prof. and Mrs. A. H. Gill, and Mrs. Kate Ganet Wells.—*Mildred E. Blodgett*, '07, *Corresponding Secretary, 72 Ashford Street, Allston, Mass.; Elizabeth B. Babcock, Recording Secretary.*

Technology Club of New Bedford.—An interesting meeting of the Technology Club of New Bedford was held on board the steamer *Gay Head* at its moorings, on the evening of March 9, through the courtesy of Agent Whiton.

The saloon was tastefully decorated with flags and bunting, and twenty-nine members sat down to a clam boil and afterwards listened to an address by T. B. Akin on his trip to Panama.

Everything passed off smoothly except that Stetson introduced a discordant note by appearing in a dress suit, but as he explained that he was going to a dance later it was overlooked.

Charles R. Allen has been appointed supervisor of State industrial schools, and has taken up his headquarters in Boston.—*Charles F. Wing, Jr. '99, Secretary, New Bedford, Mass.*

Technology Club of Puget Sound.—One of the most interesting and best attended meetings of the club was held in the banquet room of the Butler Hotel, Saturday evening, March 11. Among the matters discussed was that of interesting the right sort of students attending high and preparatory schools, in the Institute. Arrangements are being made by the officers of the club to make a thorough canvass and provide men of the right spirit and ability with information in regard to the Institute and its work.

The moving pictures of the Technology Reunion were shown, and the members heard the latest news from the Institute. Among those present were Pres. Frank Dabney, Sec. L. Arthur Wallon, Charles H. Alden, Elbridge G. Allen, LeRoy M. Backus, A. H. Bradford, L. T. Bushnell, Charles M. Culp, Charles B. Dodge, E. O. Eastwood, O. P. Emery, A. J. Farnsworth, Henry C. Field, J. W. Fleet, F. G. Frink, Gerald Frink, L. E. Geary, W. A. Gleason, L. R. Grant, K. S. Harbaugh, G. B. Harrington, A. K. Isham, A. C. Lawley, C. M. Lewis, Henry M. Loomis, E. S. Munson, W. S. Matheson, T. P. Moorehead, D. J. Myers, A. T. Nelson, A. G. Place, H. H. Plummer, A. W. Sawyer, E. F. Whitney, S. A. Gardner, Louis Svarz, H. J. Ruggles, H. S. Taft and R. H. Ober.—*L. A. Wallon, '04, Secretary, The Seattle Electric Co., Seattle, Wash.*

The Technology Club of Rochester.—The Technology Club of Rochester held its first smoker on Friday, February 24, 1911. A new departure was made by assembling in rooms of the University Club which kindly extended the privileges of its house.

The smoker was of a purely social and instructive nature, no business meeting being held.

Mr. R. M. Searle, vice-president of the Rochester Railway & Light Company, was introduced by the president, W. E. Hoyt, '68, and addressed the meeting concerning the "Commercializing of Engineering and the Engineering Professions."

Mr. Searle spoke with but slight reference to his notes, in an entertaining and informal manner, using some figures in a concrete case to illustrate his points.

His talk was much appreciated and seemed to make a deep

impression on some of the older as well as some of the younger members.

The following members were present: Lyman, '90; Haste, '96; Lovejoy, '94; Bent, '05; Cole, '91; Sulzer, '01; Foote '80; Hoyt, '68; Hopeman, '01; Ancona, '03; Rich, '13; Stewart, '09; Turnbull, '10; Packard, '07; Eisenhart, '07; Russ, '07; Allen, '05.

A vote of thanks was unanimously tendered Mr. Searle following which a buffet lunch was served.

Emerson Packard, '07, at the piano, then accompanied the bunch and safely led them nearly through the song book.

The club has three new members, F. D. Rich, J. Turnbull, '10, and M. Hogle, '01. These will tend to offset a similar number of members who have left Rochester.

It is expected to send to the members very soon a booklet containing the constitution and by-laws, together with a complete list of the membership.

Pursuant to a motion passed at the annual meeting, the secretary sent several letters to the high schools and local colleges, offering the services of the club members to any prospective Tech students. It was hoped that such a course would be of great benefit in giving prospective students a clearer conception of the work, requirements of courses, expenses, etc. But one man has made inquiry and that has proved unprolific of any result.—*J. F. Ancona, '03, Secretary-Treasurer, 190 Birr Street, Rochester, N.Y.*

Technology Club of Philadelphia.—The annual meeting of the Technology Club of Philadelphia was held at the Southern Club February 1. The following were elected for the year 1911: President, James Swan, '91; vice-president, Frank H. Keisher, '97; secretary and treasurer, W. H. Blakeman, '05; executive committee, F. A. Hunnewell, '97, E. P. Trask, '99, E. S. Foljambe, '01; H. L. R. Walker, '05; C. F. Willard, '01; Dudley Clapp, '10. A sincere vote of thanks was tendered to Percy E. Tillson the retiring secretary, for his untiring devotion and successful effort to keep things moving for the last three years. His share is large in the credit due those who have brought the Technology Club to the point where we may say we are "going some." A committee with C. M. Emerson chairman, was appointed to arrange for a bowling program, and by the time this is printed the bowling team of the Technology Club of Philadelphia will be in a position

to take on all comers at catchweights. After the business meeting we adjourned to the club rathskeller, where delectable viands were distributed and foaming steins were investigated. When the excitement over the eats had subsided, we were treated to a very interesting talk by Mr. John Overn, Jr., assistant hydraulic engineer of the William Cramp & Sons Ship and Engine Company on the McCalls Ferry Power Plant. Mr. Overn explained the construction of the dam and the construction of the power house, and then showed views of the water turbine generators built at Cramps for this installation. There are ten wheels of 13,500 horse power each and two exciters. We were much interested, also, in hearing of some far larger projected plants in the Northwest. The meeting was voted a great success, and was certainly enjoyed by all.—*W. H. Blakeman, '05, Secretary, 1618 Green St., Philadelphia, Pa.*

Technology Club of Central Pennsylvania.—The Technology Club of Central Pennsylvania held its fourth annual meeting and dinner at the Harrisburg Club on Saturday evening, the 17th of December, 1910, with the following men present: Farley Gannett, '02; J. R. Brownell, '01; F. A. Robbins, '02; C. A. Emerson, Jr., '05; R. E. Irwin, '09; F. E. Langenheim, '07; T. J. Driscoll, '99; George K. Newbury, '98; F. Herbert Snow; E. L. Chapman, '01; Paul Hooker, '01; R. V. McKay, '06; George P. Vanier, '85; Stephen Badlam, '00.

After the reading of many notices of interest it was voted to send a letter of greeting to the President of the Institute, which was done by the president, Farley Gannett, '02, and F. E. Langenheim, '07. New officers for the ensuing year were then elected: President, J. R. Brownell, '01; secretary-treasurer, Stephen Badlam, '00; representative to the Alumni Council, Stephen Badlam, '00. A vigorous discussion then followed as to the place the engineer should take in the civic life of the community, and it was the sense of the meeting that he should make himself felt in every way possible. The question of the welfare of the Institute was then taken up, and it was voted to start an active propaganda in interesting the young men of the community in Tech as a place for their education. Dr. T. Herbert Snow spoke briefly of the demand for Tech men in state and municipal enterprises, and emphasized the importance of being able to draw on local men for

local enterprises. Doctor Snow further pledged himself financially to assist this work. The proposition was made to have at least one additional meeting at which some representative Tech man should address the members of the club on some subject of general interest. It is hoped to carry this into effect during the coming year. After the meeting, the members adjourned to the dining room of the club to partake of a turkey dinner, and with the coffee, cheese and cigars mingled many a good Tech song, and ended with a rousing cheer for Technology.—*Stephen Badlam*, '00, *Secretary-Treasurer, 341 Spruce Street, Steelton, Pa.*

WASHINGTON SOCIETY OF THE M. I. T.—The weekly lunches at Wallis' Cafe on Wednesdays, the bowling every Tuesday evening at the Arcade Alleys, and the monthly meetings at the University Club are as popular as ever. The bowling enthusiasts are getting ready for a match with the team from Philadelphia some time in April.

The fifth informal dinner of the season was held on the 13th of February at the University Club, with twenty-two members present. After dinner adjournment was made to the Alumni Room, where B. L. Johnson, '05, gave a talk on "Alaska," illustrated with lantern slides. It is expected that the next informal dinner, on the 20th of March, will be followed by an illustrated smoke talk on "Explorations on Mount Rainier" by Francois E. Matthes, '95, topographic inspector, geological survey. The next formal function of the society will be the annual banquet on the 17th of April, probably at the Arlington Hotel. Dr. A. A. Noyes has promised to be there, to tell us the latest news from Boston, and other speakers of note will be present. It is hoped that all Tech men who can attend will do so, whether they have received individual notices or not.

With a continual increase in the number of active members and with no diminution in the list of associates, the society is having the most prosperous year of its existence.

The officers for the present year are: President, R. B. Sosman, '04; vice-president, F. W. Swanton, '90; secretary, D. G. Haynes, '09; treasurer, F. E. Fowle, '94; member of the executive committee (in addition to the above) Ralph Whitman, '01; representative on the Alumni Council, I. W. Litchfield, '85.—*D. G. Haynes*, '09, *Secretary, United States Patent Office, Washington D.C.*

Technology Club of Northern Ohio.—Thanks to Frank B. Meade, '89, and R. B. Wallace, '99, who secured the Hermit Club for the occasion, the Northern Ohio Technology Club had the best turnout of its career on Saturday evening, March 11, thirty-three fellows being on hand.

The menu card, from the artistic pen of F. R. Walker, '00, gave a good idea of the nourishment provided—the pot which the artist represented was kept boiling by an informal glee club in charge of Jenkins, '09, Glover, '08, Carlisle, '90, and others of the later generation of Tech men who have come from the Institute since the Tech Union and singing were added to the curriculum.

Our new president, Professor Dates, '94, of the Case School of Applied Science, chaperoned by his associate on that faculty, Professor DuBois, '01, presided. He first called upon the venerable Kreps, '87, our distinguished representative upon the Alumni Board, who gave a monologue illustrative of the sounds produced by different domestic animals. Smythe, '89, of Lorain, and Litchfield, '96 from Akron, spoke for the out-of-town delegation—and, by the way, Akron sent eight of her fourteen Tech men to the dinner, which was certainly a good turn out. Others were called on, and responded more or less informally, and it was the wish of all present that a similar meeting be held two or three times a year.

Merryweather, '96, brought up the proposition of meeting the Detroit Tech men next summer at Put-in-Bay, and taking them on at any kind of contest in which they think they are capable of competing with Cleveland—we expect to get the project under way as soon as the weather is right.

Although our membership lists are a little old, we received responses from nearly 75 per cent. of the 115 Tech men that are known to be in the vicinity of Cleveland—the secretary takes this opportunity of urging any former Institute man, whether a graduate or non-graduate, whose name may not be on our lists, to communicate with him direct, care of the Ball Watch Company. Cleveland.—*Sidney Y. Ball*, '03, *Secretary, 1847 East 97th Street, Cleveland, Ohio.*

Technology Club of Southern California.—The annual meeting of the Technology Club of Southern California was held

at the University Club, Los Angeles, on the evening of December 10, 1910, twenty-five members being present.

At the close of our dinner, the business meeting opened with the reading of a communication from President Maclaurin, who sent his hearty good wishes for the success of our association and its members.

The officers of last year were reëlected to serve for the coming year, the officers being as follows: James W. Johnson, '82, president; Edward L. Mayberry, '06, vice-president; L. A. Parker, '06, secretary-treasurer. At the close of our business meeting Mr. Lyman Farwell, '88 (assemblyman elect), gave us a talk on politics, followed by Mr. F. H. Merrill, '93, on the "Commercial Possibilities of our San Pedro Harbor." Our other speakers of the evening were: Mr. V. L. Benedict, '94, on "Woman's Suffrage"; Mr. John R. Brittian, '93, on "P-A-Y-E. Cars," giving a brief history of their invention and the reasons for their adoption by the Los Angeles Railway Corporation, and Mr. W. K. Gaylord, '93, on "The Progress of Throop Institute, Pasadena."

Among our visitors for the evening were: Mr. E. L. Caldwell, '76, of Boston, who was visiting his classmate, Mr. John F. Williard at the time, and Mr. Leon Smith, '04, who was on his way from the East to his home in San Francisco.

The meeting adjourned with a couple of Tech cheers and a "We are happy."

I am sorry to have to announce the death of two of our members during the past year: Mr. Frank B. Goudey, '97, who was killed at Dove Spring Camp on the Los Angeles Aqueduct; and Mr. Harold A. Prime, '98, who had been employed in the city engineer's office, Los Angeles, until about a year ago, when his health demanded that he make a change and get into work that would keep him out of doors. This change, however, was not made soon enough, and his death came on March 9, 1911, at the home of Capt. J. A. Osgood, '70, Sierra Madre, Cal.—*L. A. Parker, '06, Secretary, 764 Pacific Electric Building, Los Angeles, Cal.*

The Technology Association of Oregon.—The association held a very successful meeting Thursday evening, March 16, over twenty-five being present. The moving pictures of the Technology Reunion had been sent on from Seattle where they were exhibited Saturday night, and everyone took the liveliest interest

in the unusual and amusing stunts which were thrown upon the screen. In addition to these pictures a number of stereopticon slides were shown. The Portland Association is thoroughly alive and is among the most loyal on the entire list of Technology clubs. *—Antoine G. Labbé, '07, Secretary, 227½ Washington Street, Portland, Ore.*

"Frenzied French"

The thirteenth annual Tech Show will be given in Boston at the Shubert Theatre on April 20 and 21. The title of the play is "Frenzied French." It is said to be of a high order of merit.

Any person may apply for four seats provided they are for his own use. Tickets for the floor and the first four rows in the balcony, $2.00. Balcony, next six rows, $1.50. Balcony, last three rows, $1.00.

The play will be given at Worcester April 15, and at Malden April 26. Apply to business manager, Tech Show, M. I. T., Boston.

The Technology Bill Advanced

The resolve granting the Institute of Technology $100,000 each year for ten years was reached in the Senate, March 23, when Senator Lomnasey offered an amendment providing that applicants for scholarships shall make application to the State Board of Education before July 1 in each year, with the approval, in writing, of the senator from the district in which the candidate resides. Otherwise the bill has not been changed. The amendment was adopted and the resolve as amended passed to a third reading on March 29. It was then sent to the house committee on ways and means. The House committee has already had a hearing jointly with the Senate committee, and it is hoped that a favorable report will be returned and the bill acted upon by the House at an early date. It will be a matter of great satisfaction to Tech men if the legislature passes this bill and announcement can be made at or before the convening of the Congress of Technology.

TECH MEN IN THE PUBLIC EYE

CHARLES G. ABBOT, S.B., M. I. T., VIII., 1894, S.M., 1895, has been director of the Astrophysical Observatory of the Smithsonian Institution for some years past, succeeding in this office the founder of the observatory, the late Prof. Samuel P. Langley, whose assistant Mr. Abbot became shortly after receiving the Master's degree.

For a number of years Mr. Abbot has devoted himself to the study of the "solar constant," which denotes the amount of heat received normally at the surface of the earth upon a square centimeter in each minute, or rather that which would be received were there no atmospheric absorption. The determination of the amount of this absorption has been difficult and the results previously ascertained uncertain.

Mr. Abbot has made important improvements in the pyrheliometer, the instrument used in measuring the solar constant, and by prolonged observations made at the Smithsonian stations on Mt. Wilson, Pasadena, at a height of 6,000 feet, and Mt. Whitney, at a height of 14,500 feet, has been able to determine the effect of the absorption of the atmosphere with an unprecedented accuracy. The results of observations made at the two observatories differ by only one per cent., and give as the mean value of the solar constant (1905–1909) 1.925 calories per square centimeter per minute. The values of this "constant" as given by various recent authorities no longer ago than 1905 ranged from 1.75 to 4 calories, the most commonly accepted value being about 3 calories.

Mr. Abbot has also obtained what seems to be conclusive evidence of a long period variation in the "constant," and probable evidence of short period variations, phenomena of great importance as even a small change in the amount of heat received from the sun would be likely to produce marked meteorological changes.

The importance of the work of Mr. Abbot has met with universal scientific recognition. About a year since he was awarded the Draper gold medal by the National Academy of Sciences.

EDWIN H. HEWITT, 1896-97, is the subject of an editorial in the *Outlook*, New York City, under the heading, "A True Builder." The *Outlook* says,—"Fortunately, at the right moment an architect of exceptional ability began the practice of his profession in Minneapolis. For five years he has been associated with the board of directors of the Society of Fine Arts, and has been most influential in forwarding the plan for building a museum. Last year, during his absence in Europe, he was elected president of the society; and if local feeling is consulted and general capability, the working of the plan of the museum will be put in his hands. Mr. Hewitt has already given striking evidence of his possession, not only of technical skill of a high order as an architect, but of that artistic sense which is so often lacking. St. Mark's church, recently dedicated in Minneapolis, has taken its place as one of the most beautiful Gothic edifices in the country, and, like Calvary Church in Pittsburg, deserves careful study by all those who are planning church buildings. Mr. Hewitt was the architect of this beautiful structure. He has a still greater task on his hands as the architectural adviser of the Regents of the University of Minnesota, who are planning to rebuild that institution entirely and to house it as a university which represents a great state and has command of unprecedentedly large resources."

FRANK D. CARNEY, '87, formerly assistant general superintendent of the Pennsylvania Steel Company, Steelton, Pa., has just been made general superintendent of the plant. Mr. Carney entered the service of the steel company upon his graduation from the Institute in 1887. He has had practical experience in every department of the company and is particularly well qualified for the position to which he has just been promoted.

ELISHA LEE, '92, has recently been made assistant to the general manager of the Pennsylvania Railroad. Mr. Lee has been connected with railroad engineering ever since he was graduated from the Institute in 1892.

WILLIAM C. FOLSOM, '08, has just been made head of the newly created division of sanitation of Cincinnati, Ohio. Mr. Folsom has been in the service of the Massachusetts State Board of Health and also with the Filtration Department at Washington, D.C. He will have complete charge of everything that pertains to the

cleanliness of the city and will have at his disposal a corps of clerks and a squad of sanitary policemen.

ROGER W. BABSON, '98, publisher of "Babson's Reports" and a well known writer on financial and statistical subjects was born in Gloucester, July 6, 1875. After being graduated from the Institute of Technology in the course of railroad engineering, he devoted himself to reporting on railroad and public service corporations. His first work was with bond houses in the study of properties and the selling of securities. He soon found that it was impossible to represent both the buyer and the seller and he began to represent exclusively the purchasers of securities, a work which has grown into a large business in nine years. From one room with one clerk, the business has grown until it now occupies an entire building with some twenty-five clerks with offices in New York, Philadelphia and Chicago, and agents in London and Paris. Mr. Babson now controls the Moody Manual Company, and is interested in other financial and statistical publications.

CHARLES W. RICKER, '91, who has been employed for the last ten years as an electrical engineer for the Cleveland Construction Company, and Warren Bickford Company, of Cleveland, Ohio, and who has acted as operating manager for a group of railway and lighting companies, has resigned to take a position as assistant general manager and chief engineer of the Havana (Cuba) Electric Railway which operates all the electric railways in Havana. Mr. Ricker has been successively employed by the American Telephone & Telegraph Company, General Electric Company, United Electric Securities Company, and the Lima Electric Railway and Light Company, as electrical engineer. He was also connected with the electric traction department of the New York Central Railroad, and was electrical superintendent of power stations of the Inter-Borough Railroad Transit Company.

BURT R. RICKARDS, '99, who for three years has been chief of the laboratory of the Ohio State Board of Health, has been appointed associate professor of municipal and sanitary dairying in the Agricultural College at the University of Illinois.

HENRY M. HOBART, '89, the well known author and consulting engineer was recently tendered a dinner in London, England, by his professional friends in view of his coming departure from

England to join the general engineering staff of the General Electric Company, at Schenectady. Mr. Hobart joined the British Thompson-Houston Company in 1895. From 1900 to 1903 he was chief designing engineer of direct current machinery with the Union Elektricitäts Gesellschaft. He has been more recently a consulting engineer in London.

HARRISON GRAY DYAR, '89, is custodian of lepidoptera, department of insects, at the National Museum. Dr. Dyar is a frequent contributor to magazines, principally on the larvæ of lepidoptera, leaf feeding hymenoptera, and aquatic diptera. Dr. Dyar has received the honorary degrees of A.M. and Ph.D., from Columbia College.

A. B. MCDANIEL, '01, professor of civil engineering at the State University, West Vermilion, South Dakota, was recently elected secretary of the South Dakota Engineering Society.

CHARLES R. ALLEN, '85, formerly head of the department of applied science and director of the evening industrial department, New Bedford High School, and more recently director of the New Bedford Industrial School, has just been appointed supervisor of State industrial schools in Massachusetts with headquarters in Boston.

JOHN MILLS, '09, who has been in charge of the department of physics and electrical engineering at Colorado College, Colorado Springs, Col., resigned his position in March to enter the engineering department of the American Telephone & Telegraph Company. Professor Mills has written a number of text-books which are being used considerably in technical schools.

Fiftieth Anniversary to be a Holiday

In recognition of the celebration of the fiftieth anniversary of the granting of the charter to the Massachusetts Institute of Technology, the faculty has voted to suspend the regular exercises on Monday, April 10, after one o'clock, and on Tuesday, April 11, after eleven o'clock, in order that members of the instructing staff and the students may be able to attend the exercises of the celebration.

DEATH OF NATHANIEL THAYER

Nathaniel Thayer of the Corporation, capitalist, philanthropist and art connoisseur, died suddenly March 21, at his residence in Boston after suffering nearly a year from a general breakdown, aged 59. He was born at Lancaster and was a son of Nathaniel Thayer. He was graduated from Harvard with the degree of A. B. in 1871. In 1887 he became a trustee of the Museum of Fine Arts, which office he retained until his death. He served on the finance committee of the museum, and was a large donor toward its new building fund. For many years Mr. Thayer held a commanding position in Boston's financial and business life. He was president and director of the Hamilton Woolen Company, St. Mary's Mineral Land Company and the Eastern Kentucky Railway Company, vice-president and director of the Chicago Junction Railways and Union Stock Yards Company, director in the United States Steel Corporation, the American Telephone Company, American Bell Telephone Company, New York, New Haven & Hartford Railroad Company, Old Colony Railroad, Old Colony Trust Company, Bay State Trust Company, New England Trust Company, Massachusetts Hospital Life Insurance Company, King Philip Copper Company, Merchants' National Bank, Guarantee Company of North America, Roxbury Central Warf, trustee of the Suffolk Savings Bank, Cushing Real Estate Trust, Municipal Real Estate Trust, Massachusetts General Hospital, McLean Hospital and Convalescent Home in Waverley and a member of the Massachusetts Institute of Technology corporation.

President Richard C. Maclaurin of the Institute of Technology delivered the principal address at the Founder's Day celebration of Clark University, Worcester, on February 1.

We wish to thank may friends for copies of the October number of the TECHNOLOGY REVIEW. We now have a sufficient number for our purpose. The only other issue of recent years which is very low is that of April, 1910.

CLASSES TO MEET FOR DINNER, APRIL 10

Up to the time the REVIEW went to press the following classes have made arrangements for dinner on April 10 as follows: Class of '75 will meet at the Hotel Thorndike at 6 o'clock. Class of '77, Westminster Café, 6 o'clock, dinner *à la carte*. Class of '84, 6 o'clock, City Club. Classes of '85, '86 and '87, 6 o'clock in the English Room, Hotel Thorndike. Class of '98, 6 o'clock, Hotel Thorndike. Class of '92, 6 o'clock in the English Room, Hotel Thorndike. Class of '93, 6.30 o'clock, private dining room, Boston City Club. Class of '94, 6.30 o'clock, Copley Square Hotel. Class of '95, 6 o'clock, City Club. Class of '96, 6 o'clock, Wirth's Restaurant, 35 Essex Street. Class of '98, 6.30 o'clock, Boston City Club. Class of '01, 6 o'clock, American House Rathskellar. Class of '02, 6.15, Boston City Club. Class of '03, 6.30 o'clock, Hotel Brunswick Café. Class of '04, 6.30 o'clock, Copley Square Hotel. Class of '05, 6 o'clock, Bova's Café, 96 Arch Street. Class of '06, 6.30 o'clock, Copley Square Hotel. Class of '07, 6 o'clock, Technology Club. Class of '08, 6 o'clock, Hotel Westminster Café. Class of '09, 6 o'clock, Hotel Plaza, Columbus Avenue. Class of '10, 6 o'clock, Hotel Plaza.

Nearly all the classes are making ararngements to dine together, but up to March 28, definite arrangements had only been made as above. In most cases the classes will dine informally *à la carte*.

Chamber of Commerce and Technology

Recognizing the value of the Institute to the industries of New England, the Boston Chamber of Commerce has arranged to devote the April number of the monthly publication of the Chamber, *Advance New England* to the Institute in its relation to industry. This publication will appear early in April.

A. B. McDaniel, '01, professor of civil engineering, at the State University, West Vermilion, South Dakota, was recently elected secretary of the South Dakota Engineering Society.

TECH MEN ARE OFFICERS

At a meeting of the New England Water Works Association held in Boston in January, Allen Hazen, '88, of New York, was elected president. J. Waldo Smith, '87, of New York, Leonard Metcalf, '92, of Boston, Morris Knowles, '91, of Pittsburg, were made vice-presidents and Richard K. Hale, '04, was elected editor of the publication association.

Your Coöperation is Important

The coming Congress of Technology will be by far the most important event in the recent history of the Institute, commemorating, as it does, the beginnings of the teaching of applied science half a century ago, showing the breadth and importance of the work of the Institute during these fifty years, giving an object lesson in the loyalty and love the alumni bear their Alma Mater and establishing the beginning of a new and more prosperous period in the life of the Institute of Technology. The importance of the meeting is certainly worthy of your attendance.

All the problems connected with the Institute are by no means solved, and the attendance and enthusiasm at the Congress will have a very direct and important influence in giving impetus to the campaign for securing endowment from the community at large, which is to be started at once.

This is the time to impress the public with the tremendous force of Tech spirit and the power of scientific and organized effort.

Note

The library has just received through the courtesy of the Intercollegiate Association of Amateur Athletics of America, a set of illustrated books describing the last three annual track and field meets of the Association. One feature of the book is the table showing every point winner and his performance, for every year beginning with 1876 to the present time.

CONGRESS OF APPLIED CHEMISTRY

The REVIEW has received a prospectus of the eighth congress of applied chemistry which will be held in Washington, September 4, 1912. As mentioned in the October REVIEW the organization of this congress includes many prominent Tech men. Prof. H. P. Talbot, '85, is vice-president of the section of analytical chemistry; A. D. Little, '85, president of the section of cellulose and starch, and also a member of the executive committee, and William H. Walker, director of the research laboratory of applied chemistry at the Institute, is president of the section of electro-chemistry. The unusual preparations that are being made a year and a half before the congress convenes indicate its unusual importance.

Technology Observatory on Hawaii

It has been definitely decided to establish an observation station in the Hawaiian Islands during the coming summer, and announcement was recently made that Prof. Frank A. Perret, the volcanologist, will be a member of the staff of investigators, and the director of the station. Coöperating with the Institute is the Carnegie Institution, which will send Dr. Shepard to investigate the temperatures of the lava. The United States Weather Bureau will also assist in the work; an officer from the department will go to Hawaii with the Technology delegation. The earthquake station will not be built during the present season, and until building operations can be begun a cottage has been leased near the volcano of Kilauea, to be used as a station and laboratory. This investigation is made possible by a gift of $25,000 to the department of geology for geophysical research from the estate of Edward and Caroline Rogers Whitney. It is specified in the deed of gift that the work carried out with the income from this endowment shall have a bearing on the protection of human life and property. The citizens of Honolulu have agreed to pay $5,000 for five years for the support of this observatory, and the further amount needed is being made up by subscriptions from citizens of Boston and Springfield, Mass.

CELEBRATION OF FIFTIETH ANNIVERSARY

The committee in charge of arranging the program for local associations, which consists of Lawrence Allen, '07 chairman, Hollis Godfrey, '98, and Allan W. Rowe, 01, reports that arrangements have now been made with practically every local alumni association to hold a meeting on April 11, when communications will be exchanged between the home association and the various Technology clubs. Although most of the men in Massachusetts, including those in Rhode Island, will attend the Congress, the few that remain will get together and represent the local club.

In order to clear up a misunderstanding that exists to some extent we would say that the price of tickets to the banquet in Symphony Hall, April 11, is $5.00. Alumni who purchase these tickets, however, are also entitled to a ticket to the smoker. The expense of giving this banquet will be from $1.00 to $2.00 more than the charge made for each ticket. The reason is that a large banquet of this kind requires special arrangements in order that the food may be served hot and promptly. In the case of Symphony Hall, gas ranges will be erected in the lobby furthest from Massachusetts Avenue, and connections made for carrying away the burned gas. Steam tables must also be erected and arrangement for serving. In addition to this an extra force of waiters must be engaged because of the distance the food must be carried.

Technology Gets High Praise

At the annual joint dinner of the engineers residing in Boston and vicinity, held January 31, Prof. Elihu Thomson, who was the guest of honor, spoke very handsomely of the Institute, urging the heartiest support for it and speaking in the highest terms of its accomplishments. He is looking forward to the time when the results of the work carried on at such an institution will be used for its full value, resulting in a great saving of industrial waste.

ALUMNI TREASURER'S REPORT

FINANCIAL REPORT FOR 1910

At the annual meeting of the Alumni Association, January 2, the treasurer's report for 1910 was presented as follows:

FINANCIAL REPORT

Receipts

Balance on hand Jan. 1, 1910,		$381.12
Dues,		2,786.00
Refund—M. I. T. tel.,		1.14
Check returned, '07 dues,		1.72
Life membership,		1,250.00
Interest,		26.25
Annual dinner, 1910,		747.00
Council,		210.00
Spread & Pops,		1,630.17
Reunion,		2,839.59
Gifts,		10.50
Outside:		
Labor,	1,258.79	
Materials,	554.66	
		1,813.45
Received from outside organizations to be turned over		3.00
REVIEW:		
Subscriptions,	2,792.85	
Advertising,	1,831.90	
Cash sales,	13.07	
Special sub.,	28.13	
Bound volume,	1.20	
Refund,	5.16	
Asso. class sec.	779.29	
		5,451.60
		$17,151.63

Expenses

Printing, stationery, postage,	$1,612.11
Miscellaneous supplies,	257.62
Services,	3,559.47
Refund dues,	2.00
Carfares,	5.80
Multigraph,	13.95
Express,	8.20
Telegrams,	3.89
Telephone,	1.30
Checks returned,	10.05
Messenger service,	.25
	$5,474.64

EXPENSES.—*Carried forward.*			$5,474.64
Printing nominations,			36.90
Asso. class sec. (1908 Pops),			226.97
Life Membership:			
For 1909,	1,233.00		
For 1910,	975.00		
			2,208.00
Collection charges,			24.33
Annual dinner:			
250 dinners,	687.50		
Cigars, wine at guest table, music, guests' carriages, printing, postage, labor,	329.49		
			1,016.99
Refund,			19.00
Council,			285.05
Refund,			1.50
Spread and pops,			1,503.14
Refund,			26.75
Reunion tickets,			70.20
President's alumni fund,			1,000.00
President's western trip,			214.99
Outside:			
Materials,			455.17
Turned over to outside organizations,			4.00
REVIEW:			
Printing,			
For 1909,	1,157.65		
For 1910,	1,129.50		
			2,287.15
Paper,			
For 1909,	188.00		
For 1910,	526.12		
			714.12
Wrappers,		85.50	
Reprints,		43.50	
Stationery,		18.23	
Postage,		383.44	
Engraving, etc.,		150.54	
Services of editor,		458.33	
Miscel. printing,		74.65	
Gifts,		5.00	
Miscel.,		2.76	
Express,		4.70	
Binding,		21.60	
Reporting,		10.00	
Checks returned,		2.00	
Telegrams,		1.37	
Refund on subscription,		.90	
Carfares,		.65	
			1,263.17
Balance, December 31, 1910			319.56
			$17,151.63

Bills Receivable

Life Membership,		$285.00	
Review Advertising:			
Previous to October,	$81.25		
For October,	436.25		
		517.50	
State Aid:			
Labor,	113.66		
Postage, etc.,	96.75		
		210.41	
Labor and supplies:			
Previous to December,	356.00		
For December,	100.00		
		456.00	
		$1,468.91	
On hand December 31, 1910,		319.56	
			$1,788.47
Deficit,			348.87
			$2,137.34

Bills Payable

Life membership,	$275.00	
Class of '06,	35.00	
Salaries,	163.34	
Review—Printing,	1,436.00	
Review—Paper,	228.00	
		$2,137.34

Report of Walker Memorial Fund
January 2, 1911

Receipts

Subscriptions received by treasurer of Alumni Committee,	$83,178.34
Interest,	1,149.47
Additional subscriptions received by treasurer of Institute,	11,603.34
Interest on fund after investment to January 2, 1911,	35,075.17
	$131,006.32

Expenses

Bills paid by treasurer of Alumni Committee,	$2,210.77	
Bills paid by treasurer of Institute,	1,332.10	
Total bills paid,	$3,542.87	
Less appropriation of Association,	600.00	
Total bills paid from fund,		2,942.87
Balance in hands of Alumni Committee,		2,667.04
Balance in hands of treasurer of M. I. T.,		125,396.41
		$131,006.32

Report of the William Barton Rogers Scholarship Fund

Professor Richards reported informally for the Committee on Permanent Funds. He also reported for the William Barton Rogers Scholarship Fund. The work of this latter committee is taken over by the Committee on Permanent Funds.

Dr.

October 1, 1909, to balance on hand,	$11,249.59
One year's interest to September 30, 1910,	542.23
Refunded by former students,	832.50
	$12,624.32

Cr.

September 30, 1910. Scholarship Awards:		
C. J. Briggs,	$125.00	
E. S. Clark,	150.00	
F. A. Dewey,	100.00	
L. N. Downes, Jr.,	100.00	
E. R. Hamilton,	75.00	
W. B. Hargraves,	125.00	
G. S. Humphreys,	125.00	
Elmer Jacobs,	100.00	
C. W. Kyle,	75.00	
G. R. Lord,	125.00	
J. D. MacKenzie,	100.00	
Dean Peabody, Jr.,	125.00	
T. A. Roper,	125.00	
L. Rosenstein,	125.00	
L. G. Rocoe,	125.00	
J. P. Wentworth,	125.00	
	$1,825.00	
Balance on hand September 30, 1910,	10,799.32	
		$12,624.32

Year	No. of Students Aided	Amounts Awarded	Amounts Paid Back
1890–91	2	$150.00	$150.00
1891–92	8	325.00	150.00
1892–93	7	450.00	325.00
1893–94	6	400.00	220.00
1894–95	4	450.00	325.00
1895–96	5	450.00	175.00
1896–97	6	400.00	50.00
1897–98	5	500.00	210.00
1898–99	21	1,087.50	425.00
1899–00	5	525.00	462.50
1900–01	7	512.50	287.50
1901–02	7	600.00	300.00
1902–03	6	525.00	275.00
1903–04	5	500.00	200.00
1904–05	5	425.00	200.00
1905–06	9	625.00	100.00
1906–07	8	625.00	150.00
1907–08	9	925.00	275.00
1908–09	17	1,555.00	200.00
1909–10	16	1,825.00	300.00
		$12,855.00	$4,780.00

MISCELLANEOUS CLIPPINGS

The proposition that the Legislature appropriate $100,000 annually for the next ten years to aid the Massachusetts Institute of Technology in its great work is supported by every consideration of business economy and practical self-interest, to say nothing of the educational and scientific benefits to be derived from such a course; and the latter have always weighed heavily with the state in determining its policies toward such matters. In the field of technical education lies the hope of industrial preëminence for Massachusetts in future. The competition of newer states enjoying natural advantages Massachusetts does not possess, must necessarily be severe. Massachusetts has the advantage of well-established and highly developed industries, it is true, but this is by no means a sufficient guarantee of the continuance of our present prosperity as compared to other commonwealths.

We must look to superiority of industrial methods and the presence of the highest order of skilled labor to maintain the place for Massachusetts that it has already won. We must be in the van in attacking and solving modern industrial problems. It will not do for our manufactures or our technical institutions to drop behind. The example of Germany in advancing itself from a third-rate to a first-rate commercial power within a single generation is often referred to as teaching a profitable lesson, and it certainly is a striking instance of the progress that may be attained by the policy of going after results in an intelligent and systematic way. The use of $1,000,000 by the state to build up and extend the usefulness of its greatest technical institution will be not a gift but an investment, and one that will pay for itself many-fold. There can be nothing more direct than the relationship of Tech's work to the industrial efficiency of this section. It is like pushing a button and starting the current of electricity that serves as a signal for action, only it is brains, and study and an indispensable scientific equipment that keeps Tech on its high plane of usefulness. If anybody wants proofs of what Tech and Tech men have done for the industries of Massachusetts he can obtain them in abundance.

It is always easy to raise objections, cite unfavorable precedents or point out the absence of favorable ones and conjure up imaginary perils and difficulties to follow the breaking away from the small narrow groove which timid natures ever fear to leave. Shall we listen to the voice that whispers, "It isn't conservative," and "It isn't wise," without giving us any good reason why, or shall we heed the injunction, "It is business," "It is progress," "It is the way of industrial efficiency and civic accomplishment?"—*Springfield Union.*

When Tsok Tse leaves the mining camp of Vulture for China, he will carry a substantial draft for the relief of famine, flood and plague sufferers in his native land. This draft will represent the proceeds of the charity ball given at Vulture last Friday evening.

Arrivals from Vulture state that Vulture hall was crowded to its utmost capacity. There was a large attendance from Wickenburg. In fact everybody in all the

surrounding mining camps who could buy or steal a ride to Vulture was at the ball. Scores walked in and Vulture looked almost as populous as Phoenix during fair week.

As for the ball itself, everyone says that it was one grand success. The society of Northern Maricopa county was out in force. And in that democratic country society is everybody from the superintendent's wife down to the camp washerwoman.

Tsok Kia Tse was present and proved to be a general favorite with the ladies. His curious manners, reminiscent no less of China than of the Massachusetts Institute of Technology, they found very charming and quaint. Tsok was head usher. He was assisted by T. B. Black, Edward Melczer and D. J. Curry.—*Phoenix Republican.*

It would be a serious misfortune for Boston if, by the process of elimination of sites impossible because of excessive cost, the Institute of Technology should be forced to go outside of Boston or its immediate vicinity for its new location. There is no question that Technology desires to remain in Boston, and it probably will do so—either in the city proper or in one of the near suburbs. The matter is entirely a practical one, however. A certain sum can be devoted to the purchase. Obviously, this being the fact, the final selection of a site depends upon some location being found within that figure, and if no such site is found in Boston the Institute would be warranted in going elsewhere. The Springfield offer, in the state Institute's finances, is not fairly to be eliminated yet as a possibility.—*Boston Advertiser.*

In a somewhat curious fashion the Congress of Technology with which Tech will next month celebrate its semi-centennial is a news event. It is a commonplace that the application of science to industry—this being the definition of the word "technology"—has made enormous advances within the half century since Gov. Andrew signed the Tech charter. Of the larger practical uses of science, our whole modern use of electricity, for lighting, power and transportation, is comparatively new, and the newness of it is a fact familiar to every one. There are other instances of scientific development in the industries that are nearly as well known, though they are not so conspicuous as the use of electricity.

But what constitutes the news matter of technology today is not the body of great things already accomplished. What is now being attempted, and what the developing science of today is likely to lead to, are the vital matters of the present technology. These new lines of progress and development will be discussed in many of the papers to be presented at the sessions of the Congress of Technology next month. They are matters of the keenest practical and personal interest to thousands of Massachusetts men, manufacturers, merchants and operatives. The Institute has done well, therefore, in throwing open to the general public the sessions, of the second day of the Congress, at which nearly all the scientific papers will be presented.

In the industries the search is increasingly intense for economies in power, in machinery, in the use of labor, and perhaps more than all else in the two items of raw materials and administration or "management." The conditions of modern industry place a high premium on efficiency in every process, and in a curiously back-handed way we are led by the requirements of earning a profit into the most

rigid "conservation" of all our resources. The working out of new lines of conservation is the dominating idea in the applied science of the present day; and reports of these new endeavors, such as the Congress of Technology will offer to the public, are perhaps the most vital "News" matter that can be brought before an industrial community.—*Boston Herald.*

In a few days the Massachusetts Institute of Technology will celebrate the fiftieth anniversary of its establishment.

This great institution, which lays stress on the "advancement, development and practical application of science in connection with arts, agriculture, manufacture and commerce," was a pioneer in the modern movement toward technical education.

Latin and Greek and philosophy of a purely speculative nature have given way before the terrible onslaught of practical education and the trail blazed by the Boston school has been followed in a degree by institutions the length and breadth of the land.

The celebration of the semi-centennial will be in the nature of a Congress of Technology, at which a general discussion will be had of what the application of technical science to the world's business has accomplished. Papers will be read on architecture, business administration, economics, power production and administration, factory sanitation, industrial organization and training, public health, materials and manufacturing processes, reclamation of arid lands and many other subjects of vital public interest.

A glance at the list of speakers, practically all of whom are graduates of the Massachusetts Institute of Technology, shows the great field of activity opened up by this pioneer school in the scientific world. Frederick H. Newell, '85, director of the United States Reclamation Service, will be one of the men on the program. He stands at the head of hydraulic engineers in America, and is typical of the new activities opened by training men in the sciences rather than in the languages and humanities almost exclusively.

The great dam which Mr. Roosevelt dedicated in Arizona last Saturday stands as a monument to Mr. Newell. Under his supervision and with the encouragement of such men as Mr. Roosevelt and Mr. Pinchot, the government undertook this project, which will put water on 200,000 acres of land which was formerly arid.

Samuel M. Felton, '73, who has been prominently identified with the Tennessee Central and is now president of the Chicago Great Western Railroad, will also be a speaker on the Boston program. Famous architects, professors of metallurgy and mining presidents of great chemical and electrical companies and other heads of great industrial concerns will contribute to the program.

What a revelation it would be to college graduates of a century ago to hear such a program. The scholar of today is no longer an expert in Hebrew. He may not know much about Greek poetry, but may have the more important knowledge of how to construct a sanitary sewer system, or provide adequate water supplies for great cities.

This is the age when men do things. It is the age when the student does not necessarily shut himself up within his own library and ponder over the lore of the ancients. Educated men of today are awake to their responsibilities in connection with the proper administration of public affairs. They tackle live problems without hesitation and make themselves felt in the general uplift movement.

The old-fashioned school educated ministers, lawyers, doctors and teachers. The modern university still trains men for those four honored professions, but the great percentage of its graduates go into various commercial pursuits. It is an era of business and great business development, and the distinguished list of alumni from Massachusetts Institute of Technology shows how well the founders of that school appreciated the necessity for a different sort of education to meet changing conditions in the United States.—*Nashville Tennessean.*

The coming Congress of Technology, in Boston, will be an interesting anniversary celebration. It will mark the fiftieth anniversary of the chartering of the Massachusetts Institute of Technology. Incidentally and inevitably it will bring to mind, and call attention to, the vast increase in the demands of technical education since that institute was founded.

Think how technical problems have grown in the last fifty years! Mining and the treatment of ores, railroad construction, other forms of transportation, the production and distribution of power, the various applications of chemical knowledge, are but a few of the things which have witnessed a marvelous development. This anniversary of Massachusetts Tech calls attention to the achievements of half a century and to what amounts to a wonderful transformation of human society.

The number of technical schools in this country, and the introduction of technical training in the common and secondary schools, show how thoroughly the present generation recognizes the need of better and more general technical instruction than was given fifty years ago—better than is even yet given.—*Buffalo Express.*

BOOK REVIEWS

SEWAGE DISPOSAL, by Leonard P. Kinnicutt, '75, C.-E. A. Winslow, '98, and R. Winthrop Pratt, '98, 1910.

The statement made in the preface of this book may serve to indicate its mode of attack. " . . . it seemed to us that there remained room for a general survey of the (sewage) problem from the various viewpoints of the chemist, the sanitary biologist and the engineer, and with particular reference to the conditions of American practice."

This composite point of view has resulted in the production of a most interesting and valuable treatment of the whole sewage problem. If any one point of view may be said to predominate over the others, it is that more theoretical aspect of the problem, which involves knowledge of the underlying chemical and biological principles. In its engineering aspects the book is perhaps less complete than other works upon the same subject; probably purposely so in view of the large number of works upon the general subject of sanitary engineering and many special engineering treatises upon the more restricted subject of sewage disposal. Each chapter is rich in historical references, and each is particularly fortunate in containing the very latest work upon the subject under discussion. The special reference to American practice makes the work of exceptional interest to American engineers, although one cannot but note the very obvious preponderance of European work.

The authors devote an introductory chapter to the question of the sanitary demand for sewerage and sewage disposal, and a chapter to the chemical composition of sewage, after which there follow chapters upon disposal by dilution, upon the various mechanical preliminary treatments, upon the septic tank processes, with a special chapter upon sludge, and then one or more chapters upon each of the main biological processes, irrigation, intermittent sand filtration, contact beds and trickling beds. The book concludes with a chapter on disinfection of sewage and sewage effluents and a final chapter describing the general features and methods of sewage analysis.

It is well illustrated throughout, especial care having been taken to select illustrations of distinct merit, and each having a definite reference to the matter immediately under discussion. Material has been freely borrowed from various authorities, and the book is especially rich in material transmitted first hand from various private sources of information.

The bibliography is exceedingly full, although it is expressly stated that no attempt at a complete bibliography is made. The eleven pages of references are to those authorities cited in the text, which serves better than anything else to illustrate the thoroughness with which previous literature has been digested.

One may say with no fear of contradiction that by reason of its breadth of treatment, its wealth of citations and its inclusion of most recent work, it will for many years rank high among similar productions from whatever source.—*Earle B. Phelps, '99.*

ELEMENTS OF MACHINE WORKS, XI+192 P.P.; price $2.00, and PRINCIPLES OF MACHINE WORK, XIV+388 P.P.; price $3.00; by Robert H. Smith, Instructor in Machine Tool Work, M. I. T., Industrial Ed. Book Co., Boston, Mass., 1911.

These two eminently practical treatises upon the operation of hand and machine tools, constitute a substantial advance in the literature of the machine shop. Beginning in each case with a comprehensive explanation of the machine or tool under consideration, the author leads the student in a natural and logical manner to an understanding of its broadest and most complex uses.

The volumes are both replete with well-adapted illustrations. Whenever possible the actual relation of the operator's hands to the tool in use is clearly portrayed. This unique and original feature serves to impart by a glance to the eye, the substance of many a long and wearisome explanation, with the result that a vast amount of information is accurately and quickly gained.

In each machine process a definite and rational method of procedure is laid down in the form of a tabulated "Schedule of Operations," with the successive steps numbered in logical order. This feature is believed to be original with the author. The student is thus taught to avoid a series of aimless attempts at a certain line of work, and is encouraged rather to grasp the fundamental principles which underlie the industrial process. Not alone are these books useful to the student of mechanic arts but the trained machinist as well will find in them a vast amount of exact information.

To supplement the ordinary demands of the machine shop considerable space is devoted to well-arranged tables of data and standards. The ordinary problems in shop installation which the machinist is often called upon to solve are illustrated and explained.

This series of books, of which the third volume on "Advanced Machine Work" is in preparation, well illustrates the systematic teaching of the educational principle which underlies industrial education. They are the outcome of many years of faithful study and practice upon the part of the author. It is believed that they will be found equally useful in the school and in the shop.—*George B. Haven, '94.*

TEXT-BOOK ON PRACTICAL ASTRONOMY.—By George L. Hosmer, Assistant Professor of Civil Engineering, Massachusetts Institute of Technology. First edition. New York: John Wiley & Sons. London, England: Chapman & Hall, Ltd. Cloth; 6 x 9¼ ins.; pp. 205; 78 text illustrations and 7 tables. $2, net; English price, 8s. 6d., net.

The teaching of astronomy to students of civil engineering is somewhat difficult. The time available for this subject in many institutions does not permit of a more extensive treatment than is given in the text-books on plane surveying; and this is not always sufficient to produce a thorough understanding even of all the simpler operations.

Mr. Hosmer's book treats of practical astronomy for engineering students with about the amount of detail and degree of thoroughness with which it should be taken up, if observations and reductions are to be understandingly, not mechanically, performed. The book is especially adapted for students who have studied surveying and know how to use surveying instruments and who have not time to

take an advanced course in astronomy, and is written from the point of view of the engineering student who desires results.

The scope of the book and the method of treatment are on middle ground between the surveying text-book, which usually needs considerable supplementing, and the text-book on geodesy, which is too intricate for many students. In addition to its usefulness as a text-book for a separate course in astronomy, it will serve well as a reference book to supply the supplementary information which is usually needed in book form whenever astronomy is taught in connection with surveying.

The book deals chiefly with such observations as can be made with surveying instruments, but also treats briefly observations of a higher degree of precision. Unnecessary refinement is avoided; but in order to prevent misuse of short cuts, emphasis is placed upon an understanding of principles and a proper conception of the relative value of the different elements of the problems.

The matter is concisely and definitely handled; explanation is supplemented by many excellent diagrams and charts; such tables as are needed, or are useful for more than a short time, are given.

The book contains 14 chapters, a set of tables and an appendix. The subject matter is as follows: I. The celestial sphere; the real and apparent motions of the earth, the sun and the other planets. II. Points and circles of reference. III. and IV. Systems of coördinates on the celestial sphere; relation between coördinates and their relation to the observer. V. The several kinds of time, their relation to each other, to longitude; the measurement of time. VI. Explanation of the use of the American ephemeris and nautical almanac, and star catalogs. VIII. The figure of the earth; correction for parallax, for refraction, for semi-diameters o sun or moon, for dip. VIII. Attachments to the engineer's transit for astronomical observations; the sextant, the zenith telescope; observations. IX. The constellations, planets, and stars considered in practical astronomy. X. Observations for latitude on a circumpolar star; on the sun; on a southern star. XI. Observations to determine the time. XII. Observations for longitude. XIII. Observations for azimuth. XIV. Nautical astronomy; latitude, longitude and azimuth at sea; the position of a ship. Tables and short appendix on tides and tidal observations.—*Engineering News.*

We have just learned as the REVIEW goes to press of the sudden death of Mrs. Ellen H. Richards, wife of Professor Robert H. Richards, and instructor in sanitary chemistry at the Institute. Mrs. Richards was stricken with angina pectoris at her home in Jamaica Plain, March 23. She rallied to some extent and it was believed that she would recover. On March 30, however, there came a turn for the worse and she passed away soon after nine o'clock in the evening. Shortly after she was stricken, she called for pen and paper and insisted on putting the final touches on a paper which she was to have read at the Congress of Technology. An account of Mrs. Richards' great service to the Institute, state and nation will appear in the May REVIEW.

CONGRESS OF TECHNOLOGY

Marking the 50th Anniversary of the Granting of the Charter to the Massachusetts Institute of Technology

PROGRAM

MONDAY, APRIL 10:

2.30 Address by the President of the Institute and opening session of the Congress in Huntington Hall. Open to the public.

6.00 Most of the graduate classes will dine together.

8.00 Anniversary smoker at Symphony Hall. The Waltham Watch Company Band of thirty pieces will be in attendance. A number of new and special entertainment features will be introduced, and refreshments will be served. Dress informal. Accommodations for 1100 on the floor. Tickets, $1 each; balcony seats for undergraduates and friends of alumni, 50 cents each. Five dollars ($5) entitles former students and undergraduate seniors to tickets for smoker and banquet.

TUESDAY, APRIL 11:

11.00 to 1.00 and 2.30 to 4.30.
Sessions of the Congress in the Institute buildings. Open to the public. Papers will be classified into five general sections. Definite assignment of sections and program of papers will be announced later.

7.00 **SHARP.**
Subscription banquet in Symphony Hall, to be addressed by men of National reputation who have been identified with the progress of science and industry. Arrangements of an unusual character are being made for this banquet. Covers will be laid for a thousand guests. Subscription ticket, $5. Purchasers of banquet tickets are entitled to as many balcony tickets as may be desired. Balcony seats for undergraduates and friends of alumni, 50 cents each.

Applications must reach Walter Humphreys, Massachusetts Institute of Technology, Boston, by April 8th. Tickets will be mailed unless otherwise ordered.

NEWS FROM THE CLASSES

1868.

PROF. ROBERT H. RICHARDS, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

W. P. G. Hayward is located at 1210 Bannock Building, Denver, Col. Mr. Hayward, who is a member of the class of '70, is a banker in Denver and used to sing with the secretary in the Glee Club in 1866. Hayward and Sam Cabot were always great friends.—The Washington Society of Engineers had a reception and dinner, February 20, in honor of Brig.-Gen. William H. Bixby, Chief of Engineers, U. S. A., and of former chiefs of engineers residing in Washington. Senator Theodore E. Burton delivered the address of the evening, reviewing briefly the accomplishments of the Corps of Engineers since its organization.—Eben Stevens says that he has been trying to take things easily but with his ordinary vocation of earning bread for the family and establishing a municipal water plant in his town, where he is chairman of the commission, and with his spare time aiding the committee on State Aid to obtain their grant of $100,000 a year for ten years from the State, he is not eating the "bread of idleness" this winter. During the winter months he is living at the Hotel Bellevue, in Boston.—While attending a dinner given in New York City to the contributors to the Encyclopedia Brittanica, in January, Prof. Robert H. Richards was kidnapped by some members of the Technology Club of New York which was holding a dinner at the Knickerbocker Hotel, and taken to the banquet where he made a speech. He went to Lebanon, Pa., professionally, to see an interesting concentrating plant where the process consists of first taking out the iron with a magnet and then concentrating the copper with the usual concentrating tables. The iron which is of a low grade as it comes from the mine, becomes high grade upon the removal of the copper, while the copper is a salable concentrate of commercial value. Subsequently he visited the Sheffield Scientific School of Yale, where he met Professor Bugbee and they were delightfully entertained by Professor Huntoon and were shown the John Hayes Hammond Laboratory. While in New Haven a long distance telephone message called Professor Richards to Joplin, Mo., to inspect one of his new machines which had just been installed. He found the machine doing excellent work and returned home in time to begin work at the first of the term with his boys.—A letter from Bryant P. Tilden, dated Jamestown, N.D., March 11, brings the

very unwelcome news that he suffered a stroke of paralysis last year which has confined him to the house ever since. He says, however, that he does not appear to get any worse and probably no better.—Charles B. Fillebrown writes that he cannot think of anything for publication in THE REVIEW except "Fillebrown abates no jot or tittle of interest in his taxation specialty." On the 9th inst. by invitation of Professor Carver, who was called away, he "substituted" for the professor in his political economy class at Harvard and at Radcliffe."—Myles Standish writes that not being actively engaged in business, he had little news of general interest. His time is passed in looking after his private concerns and in the ordinary activities of modern life with some foreign travel.—Whitney Conant writes that he has not felt better for many years and is living a most happy and quiet life.—James P. Tolman has just returned from a visit to his son, Dr. Richard C. Tolman, '03, who is temporarily occupying the position as instructor in physical chemistry, at Ann Arbor.

1869.

H. A. CARSON, *Sec.*, 79 Glenwood Street, Malden, Mass.

John Rayner Edmands, son of General Benjamin F. and Catharine Edmands, was born in Boston, February 18, 1850. He entered the newly-established Massachusetts Institute of Technology in the fall of 1865, for which he was prepared at the Boston English High School. When the time for a choice of courses was reached, he decided to take the Course in Mechanical Engineering from which he was graduated in 1869. He was thus the youngest man who has ever been graduated from the Institute. The writer well remembers his boyish appearance as a junior officer of the Institute battalion about 1867, and the sober dignity of his deportment in that position. He was an excellent student and much interested in various studies other than the purely professional ones of his course, especially in certain branches of physics, among which the subject of the compensation pendulum may be particularly mentioned.

Soon after graduation he entered upon the practice of his profession. During the summer of 1870 he was draughtsman for the Moseley Iron Building Works, and throughout the autumn and early winter of the same year acted as a surveyor on the Massachusetts Central Railroad. From March, 1871, to July, 1873, he was employed as a mechanical engineer in the engineer's department of the Providence Water Works. While here he took a responsible part in the design of the Cornish pumping engine, which was constructed for that city under the direction of Lebbeus Ward. His health, however, was not good, so that he was obliged to withdraw from active work until the end of 1874, when

he opened an office on Franklin Street in this city. At this time he also pursued advanced studies at the Institute as a graduate student.

He had long been interested in the measurement and distribution of time, and in 1881, on his appointment to a position in the Harvard College Observatory in charge of the time service, he entered upon a wholly congenial occupation. This particular work came to an end in 1892 at which date the public distribution of time by the Observatory was discontinued in consequence of the more extended development of this work by the United States Naval Observatory, but he remained a member of the staff of the Harvard Observatory as librarian during the rest of his life.

On October 21, 1885, Mr. Edmands married Miss Helen L. Atkins of Boston. Their married life, however, was of brief duration. Mrs. Edmands died January 6, 1888, leaving an infant daughter, who survived her mother only a few weeks.

During the winter of 1909–10 the state of his health had been such that he sought relief in a southern trip. While returning, however, he became so ill that he was obliged to break his journey and go for treatment to the Johns Hopkins Hospital in Baltimore. His disease was beyond remedy, and he died in the hospital, March 26, 1910.

As an alumnus of this Institute, Mr. Edmands maintained an unbroken interest in its welfare throughout his life. He was active in the early work of the Alumni Association and always ready to render whatever services were possible. When the Course in Electrical Engineering was opened he lent his aid, and for several years gave one or more lectures annually upon the electrical distribution of time and kindred subjects. The continuance of his love for the Institute and his belief in the importance of its work were finally manifested by the bequest to it of a considerable portion of his estate. In this he carried out an intention of many years standing.

Mr. Edmands was a passionate lover of the mountains and greatly interested in mountain exploration. He was one of the most earnest and active promoters of the Appalachian Mountain Club from its inception in 1876, and in 1886 was chosen to be its president. He continued to be an active member of one of its most important committees up to the time of his death. He devoted much time and strength throughout many years to the opening and maintenance of mountain paths and camps upon the northern peaks of the great range of the White Mountains and spent largely of his substance to bring them up to the high level of his ideals. The sad devastation wrought by the axe of the woodman was to him a source of deep grief and resentment. On several occasions he instituted efforts toward concerted action to save the New Hampshire forests, but these did not meet with sufficient response at the time to become effective.

THE NEW YORK
PUBLIC LIBRARY

LEONARD PARKER KINNICUTT

Throughout his life he was a lover of the best music, which was an unfailing solace to him. He seemed especially to enjoy the works of the great masters of choral music and of Bach in particular. He was, moreover, a skillful musician, and for forty-two years, from 1868 until his death, he took charge of the music of the Howard Sunday School of the Bulfinch Place Chapel, an institution in which he was deeply interested.

His was a nature of exceeding sensitiveness and great uprightness. Anything which lacked in beauty or in truth jarred sadly upon his being. He was a sincere friend, and beneath a reserve at times quite impenetrable he concealed a willingness to open his feelings deeply to those whom he trusted. If because of the same sensitiveness he sometimes found it difficult to work with other men, this arose from over-earnestness with an occasional failure to perceive that there are many ways of looking at practical problems, and many possible and proper solutions of them rather than from mere insistance upon his own desires. He possessed likewise a great bravery of spirit with which he strove against the severe afflictions that came to him. These he bore with fortitude and without bitterness.

Those who knew him best will remember him with the most regard; but no one who ever had dealings with him can fail to recall with admiration his sterling integrity, strong earnestness and untiring devotion to the works which he set himself to accomplish.

C. R. C., '70.

1875.

E. A. W. Hammatt, *Sec.*, Hyde Park, Mass.

The annual meeting of the class was held at Young's Hotel, March 3, 1911, at 6.30 P.M.—After the usual social hour, the following sat down to dinner: Aspinwall, Beal, Bowers, Dorr, Hammatt, Hibbard, Lincoln, Mixter, Plimpton, Stoddard, Willard. Meeting called to order by President Hibbard at 8.50 P.M. Records read and approved, and reports of secretary and treasurer accepted. The old board of officers was reëlected. Beal reported that flowers were sent in the name of the class to Kinnicutt's funeral.—Adjourned at 10 P.M.

The following sketch of the life of Leonard Parker Kinnicutt is from *The Journal* of the Worcester Polytechnic Institute. The cut of Mr. Kinnicutt is also produced through the courtesy of that publication:

"At dawn of the sixth of February, death came peacefully to Leonard Parker Kinnicutt, senior professor at the Institute, and for nearly thirty years one of its most loyal and efficient members.

"Returning from a delightful summer of European travel, he had begun the work of the year, apparently in as good health as

usual. But the semester had hardly opened when he was confined to the house by what seemed a slow fever. Nearly two months passed before the real cause of his illness could be diagnosed as tuberculosis. At once all the resources of medical science were enlisted to combat the disease, but they proved of little avail. Toward the end of January his heart began to be seriously affected, and he sank rapidly. The end was probably hastened by the sudden death of his sister, which occurred a week before his own.

"Dr. Kinnicutt was born in Worcester, May 22, 1854, the son of Francis H. and Elizabeth Waldo (Parker) Kinnicutt. Following his graduation from the Massachusetts Institute of Technology in 1875 with the degree of bachelor of science, he spent four years in the study of chemistry at the universities of Heidelberg and Bonn. At the former he came under the inspiring influence of Bunsen, and at the latter he was charmed by the fascination of organic chemistry under the famous master, Kekule. During these years he made many lifelong friends, among them Hempel of Dresden, Anschütz of Bonn and Treadwell of Zurich, with whom he was in active correspondence to the last. Returning to the United States in 1879, he spent a year in graduate study at the Johns Hopkins University, and then three years at Harvard, where he served as instructor in quantitative analysis. In 1882 he received from Harvard the degree of doctor of science, and in September of the same year came to the Institute as instructor in chemistry. In the following January he became assistant professor of chemistry; three years later he was made full professor, and since 1892 has been director of the chemical department.

"Dr. Kinnicutt was an indefatigable worker in varied lines of chemical research, as will be seen from a list of his scientific papers:

1. With R. Anschutz—Vorläufige Notiz über einen Versuch zur Darstellung der Phenylglycerinsäure. (B. 1878, 1219.)
2. With R. Anschutz—Addition von Bromwasserstoff mittelst einer Lösung von Bromwasserstoff in Eisessig. (B. 1878, 1221.)
3. With R. Anschutz—Uber Phenylglycerinsäure. (B. 1879, 537.)
4. An Indirect Determination of Chlorine and Bromine by Electrolysis. (*American Chemical Journal*, 1882, p. 22.)
5. The Decomposition of Phenyl-tribrom-propionic Acid by Water. (*American Chemical Journal*, 1882, p. 25.)
6. A Modification of Noak's Method for Preparing Carbonic Oxide. (*American Chemical Journal*, 1883, p. 43.)
7. With George M. Palmer.—B. Phenyl-tribrom-propionic Acid. (*American Chemical Journal*, V, 1883, p. 383.)
8. With J. W. Nef.—Volumetric Determination of Combined Nitrous Acid with Potassiumpermanganate. (*American Chemical Journal*, 1883, p. 338.)

9. Analysis of Meteoric Iron from Little Miami Valley. (*Sill. American Journal*, 1884, p. 497.)

10. With R. C. SWEETSER—Remarks on Schulze's Process for the Quantitative Determination of the Halogens in Aromatic Compounds. (*American Chemical Journal*, 1884, p. 41.)

11. With G. D. MOORE—The Action of an Alcoholic Solution of Silver Nitrate on the Ethyl Ether of Phenyl-dibrom-propionic Acid. (*American Chemical Journal*, 1891, p. 204.)

12. With G. R. SANFORD—The Iodometric Determination of Small Quantities of Carbon Monoxide. (*Journal American Chemical Society*, 1900, p. 14.)

"Since 1900 he has carried on many investigations, particularly in sanitary work and in the capacity of consulting expert. Many results of such work have been published as reports. He also delivered a number of comprehensive lectures which were subsequently published in pamphlet form; these related particularly to water supply and sewage disposal. In this field he became a recognized authority. His advice on matters of sanitation was in frequent demand, even from distant states, and he was often called upon to testify in important court cases, perhaps the most notable being in relation to the Chicago drainage canal. Since 1903 he has been consulting engineer for the Connecticut Sewage Commission. He was a frequent contributor to scientific periodicals, and to the proceedings of learned societies upon topics relating to his specialty. In 1910, in collaboration with Prof. C.-E. A. Winslow of the Massachusetts Institute of Technology and Mr. R. Winthrop Pratt of the Ohio State Board of Health, he published a book entitled "Sewage Disposal," which has received high commendation, and has been widely adopted as a university text-book.

"Recognition of Professor Kinnicutt's work in sanitation came from distinguished sources in England and on the continent. One of his highest honors was his appointment as president of the Section of Hygiene of the International Congress of Applied Chemistry, which is to be held in Washington and New York in September, 1912. With characteristic courage and persistence he continued work upon plans for this great gathering of scientists until within ten days of his death.

"At the Institute, his enthusiasm for his specialty was shown, not only by his work in his own department, but by his taking the initiative in the establishing of a new and very promising course for the training of students in sanitary engineering, a field in which he foresaw a large demand for men of adequate equipment.

"Dr. Kinnicutt was keenly interested in Worcester's health problems. His advice was constantly sought in regard to methods of sewage disposal. He kept a careful watch upon the city's water

supply. During the "water famine" of the present winter, from his sick-bed he directed the tests to be taken, had daily reports brought to him, and outlined the methods by which in his opinion the city's health might be best safeguarded. He was one of the prime movers, several years ago, in the effort to secure a pure milk supply in summer for the babies in needy families, and gave liberally of his time, skill and money to that philanthropy. At the time of his death he was a member of the Worcester Medical Commission, which is studying the question of pure milk for the city.

"Dr. Kinnicutt was widely connected with scientific associations: He was a fellow of the American Association for the Advancement of Science, of which he was vice-president in 1904; a member of the Society of Bacteriology; a member of the American Chemical Society, and president of its Northeastern Section, in 1902; a fellow of the New England Water Works Association; of the Boston Society of Civil Engineers; of the American Antiquarian Society, and of various foreign associations, including the Association of Managers of Sewage Disposal Works of England, the London Chemical Society and the German Chemical Society. His rare social gifts made him a valued member of several clubs: The Bohemians, the Worcester Club, the Worcester Harvard Club and the Tatnuck Country Club in his home city, and the St. Botolph Club in Boston. He always received a warm greeting at gatherings of the Alumni of the Massachusetts Institute of Technology, of the Johns Hopkins University and of Harvard University, for he had many friends in each of these institutions with which he had been connected, and to a surprising degree he kept up his interest in the life and work of each, to the great advantage of his service of the Institute.

"But varied as were his outside associations, Dr. Kinnicutt's life work was as a teacher in the Worcester Polytechnic Institute. As the Institute grew, and differentiation within his own department became necessary, he retained the course in general chemistry with the freshmen and advanced work with the seniors, giving over in large measure to younger men the work with the other classes. The choice was a fortunate one, for it brought him close to the students at the two stages when he could be of most service to them. Not only did this give the freshmen an opportunity to be grounded in the science by the most experienced of the teachers of chemistry, but it also brought them in touch with a most engaging and helpful personality. For Dr. Kinnicutt never considered it his sole function to teach his students chemistry. And so, of a morning, it never surprised his class to find the lecture interrupted for a frank talk on gentlemanly manners or personal hygiene, on legal rights or true and false Tech spirit. As one of his recent pupils said: 'He used to talk to us about the things we needed to know, which none of the other professors touched.'

"In the senior year he met the chemists in a small group so that he could study them individually. He gave of himself liberally in their service and deserved and received their loyal devotion. Nor did this relation end with Commencement, for he followed his graduates in their professional careers with the interest and affection of an elder brother, still ever ready to help them forward. And by precept and practice he impressed the lesson that the Institute should expect her students and her graduates to be not less gentlemen than scientists or engineers.

"He always had the interests of the student body at heart, and gave liberally of his strength and of his means to secure a more healthy and well-rounded college life among Tech men. Through his efforts the use of Newton Hall was secured for the Institute, and for seven years he had the patience to devote a surprisingly large amount of his time to trying to make that experiment a success; and when it became clear that it was no longer wise to continue that enterprise, he put a deal of time and energy into trying to determine whether it was not feasible to transform Newton Hall into a Tech Union, but its location proved too serious an obstacle.

"His personal interest in students did not stop with matters of scholarship or of the formal relations between teacher and pupil. He got them out of their court tangles. He was prompt with advice and aid to those in financial straits. Scores of past students bear witness to the friendly counsel and help which he gave them, always in the kindliest way. Through his wide acquaintance in Worcester, he found opportunities for employment for many students, and not a few of his friends were induced by him to aid individual students in their struggles.

"His genial friendliness made him a charming host and entertainer, whether at the laboratory, in his beautiful home, or in social and scientific gatherings. He was liberal in his gifts to many a Worcester philanthropy, as well as to the needy with whom he was brought in personal contact. And he gave of himself not less freely than of his means. His prompt, generous and tactful sympathy is a beautiful memory to many whom he heartened in the darkest hours.

"The Institute owes to Leonard Parker Kinnicutt a debt of gratitude for nearly thirty years of devoted and distinguished service. Yet it was the man, not the scientist, who made the deepest impress. In the words of Prof. William T. Sedgwick, an intimate friend throughout his professional life: 'His personality was unique, lovable and altogether charming. Kindness and friendship such as his life exemplified could not further go. He was critical, yet just; fearless, yet considerate of others; honest to a fault; a hard worker; and to a degree nowadays unusual, an accomplished and cultivated gentleman.'"

1877.

RICHARD A. HALE, *Sec.*, Lawrence, Mass.

The annual reunion and dinner of the class of '77 was held Wednesday evening, March 1st, at the Technology Club, Boston. President C. F. Lawton presided and eleven other members were present. Dr. Maclaurin was the guest of the evening and gave some very interesting facts regarding the general situation relating to Institute affairs and the progress being made towards the selection of a new site. The officers elected for the ensuing year were: Joseph P. Gray, president; John Alden, vice-president; and R. A. Hale, secretary and treasurer. A class directory, covering a period of thirty-four years, is shortly to be issued, containing a sketch of the life of each member and half tones showing their faces at the early and recent dates. Those present at the meeting were: John Alden, chemist of Pacific Mills; William B. Bradford, draughtsman, U. S. Navy Yard, Charlestown; E. W. Davis, of the Puritan Press, Boston; W. E. Fairbanks, with J. A. Farrell of Boston; Walter Jenney, president of the Jenney Refining Company, South Boston; Charles F. Lawton, superintendent of streets, New Bedford; George A. Nelson, assistant city engineer, Lowell; A. L. Plimpton, chief engineer, surface lines of Boston Elevated Railway Company; C. H. Peabody, professor of naval architecture, M. I. T.; H. C. Southworth, mining engineer, Stoughton; R. A. Hale, of the Essex Company, Lawrence; George F. Swain, professor of civil engineering, Harvard University, and B. T. Williston, general manager, Hancock Inspirator Company, Boston. After the talk by President Maclaurin, the evening was occupied in general conversation

1879.

EDWIN C. MILLER, *Sec.*, WAKEFIELD, MASS.

The thirty-first annual meeting of the class of '79 was held at the Hotel Knickerbocker, New York, on Saturday evening, January 21, 1911. The dinner was held with the Technology Club of New York who were holding their annual dinner. Those present were Fred H. Lane, Walter Large and Edwin C. Miller. Mr. Jenks and Mr. Fullerton were expected but were unavoidably detained. Many of the class were away from their homes, some being abroad, which explains the small attendance. B. H. Locke, '72, and D. W. French, '83, were seated at the same table with '79. It was with much sorrow that the secretary of the class, just before the dinner, learned of the death of our classmate, Horace J. Howe, on the morning of January 21, at his home in Yonkers, N. Y. A floral wreath was sent for the funeral services as a tribute from the class, and the secretary attended the services held in Yonkers. The

following officers were elected for the year 1910–1911, twenty-one ballots being cast: President, Allan Jenks of New York; vice-president, L. J. Howe of Marlboro, Mass.; secretary, Edwin C. Miller of Wakefield, Mass.; business committee, Richard H. Morgan, Plymouth, Mass., and George F. Blake, Jr., of Worcester, Mass. Letters were received from A. B. Harlow of Pittsburg, Pa., D. C. Hemingray of Covington, Ky., W. S. Stearns of Lockland, Ohio, W. H. Rea of Pittsburg, Pa., George F. Riggs of Carlisle, Pa., L. P. Howe, Marlboro, Mass., George F. Blake, Jr., Worcester, Mass., Col. R. H. Morgan, Plymouth, Mass., Prof. R. W. Lodge, Redlands, Cal. Others sending notices that they would be unable to attend were F. G. Stantial, S. A. Sargent, J. W. Cabot, C. S. Gooding, W. S. Haseltine of Boston, Wilson Eyre of Philadelphia, Horace J. Howe, Prof. William H. Pickering of Cambridge and Henry G. Hall of Salem. An interesting letter was received from Harry H. Campbell, who is still at Hotel Chalfonte, Atlantic City. The speakers of the evening were President Maclaurin, Prof. R. H. Richards, Charles Hayden and others, and were instructive and interesting. Their subject was on the present condition and the future of the Institute. Singing and merriment by the members of some of the younger classes made the evening one of enjoyment.

Horace Joseph Howe, S. B.

Horace J. Howe, who died suddenly in Yonkers, N.Y., on January 21, 1911, was a graduate of the Massachusetts Institute of Technology in the class of 1879. He studied in the civil engineering course and always followed closely his profession. He was born in Lynn on January 2, 1860, and was graduated from the Medford High School in 1875.

Immediately after being graduated from Technology he was employed with the Erie Railroad Company, then in the construction department of the Northern Pacific Railroad until 1885. During this time he was stationed at Brainerd, Minn., Missoula, Mont., Portland, Ore., Tacoma, Wash., and was employed on bridge work at Coeur d'Alene, Idaho, Brainerd and St. Paul, Minn. Later he was connected with the St. Louis and Sante Fé Railroad and with the late eminent Engineer George L. Morrison. He reëntered the employ of the Erie Railroad in 1888.

In 1894 he was employed as an assistant engineer by the Boston Transit Commission, later by the New York, New Haven & Hartford Railroad in construction work at Forest Hills and the New York Central Railroad. In 1900 he became an assistant engineer for the Rapid Transit Railroad and Public Service Commission of the City of New York which position he held at the time of his death.

His work in connection with the moving of the bridge of the Harlem ship canal and construction of the New York Subway

and Manhattan Viaduct showed his engineering skill, judgment and ability in his chosen profession.

He was a member of the American Society of Civil Engineers, Boston Society of Civil Engineers, Municipal Society of Engineers in New York City, National Civil Service Association and the Technology Club of New York, and was author of a paper entitled "Some instances of piles and pile driving," read before the Boston Society of Civil Engineers in 1898 and a paper entitled "Replacement of the Superstructure of the Harlem Ship Canal Bridge," read before the American Society of Civil Engineers in January, 1910, and published in their transaction in June, 1910.

Actively interested in church work he was treasurer of the Unitarian Club of Yonkers which adopted resolutions as follows: "As a citizen he was public spirited and progressive, as a Unitarian devoted, and as a friend true." Resolutions were also adopted by the Yonkers Choral Union of which he was an officer and member for many years.

He was married in 1899 to Stella S. Weston of Medford and leaves, besides the widow, three sons and a daughter. The characteristics which Mr. Howe indicated to his classmates in his youth were those which he showed during his life. "The friends of his boyhood days were those of his young manhood, and those of that period were the friends of his riper age. He showed his devotion to them in kindly acts and never forgot them in joy or sorrow. Every now and then there would come to them from his pen, a cheerful message or some quaint conceit for he had a keen sense of humor.

Of large heart and brain, quiet and unassuming, deeply sympathetic, he was a companion for conversation or restful silence. He greatly delighted in nature and music and was thoroughly appreciative of the best in English literature, finding in his favorite author, Emerson, both enjoyment and inspiration. "No estimate of his life and character would be complete that did not give an important place to his love of little children, not only his own, with whom he was a never tiring companion, but the growing boys and girls of his neighborhood found in him an always interested friend." And such was our classmate who has gone from us.

1882.

WALTER BRADLEE SNOW, *Sec.*, 170 Summer Street, Boston, Mass.

The twenty-ninth annual dinner occurred at the City Club on Thursday evening, February 2. Darrow, French, Gooding Herrick, Munroe, Snow, Strickland and Warren were in attendance.

1885

I. W. LITCHFIELD, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The '85 class dinner will occur on Saturday, April 15, the Saturday before Easter. We expect this will be the best attended meeting we have ever had.—It is a great pleasure to learn that Dave Baker is now pulling himself together after a siege of pneumonia followed by typhoid fever and attended by other complications. On the first of February he was sufficiently recovered to make the journey to Atlantic City, returning to Philadelphia early in March to slowly pick up the threads of business which he was forced to drop last fall. His welcome letter, received a few days ago, recounts some of the happy days of the reunion at Squam Lake. He closes by saying "The spirit of '85 is, I believe, the true Tech spirit as I knew it."—George Nye is one of the moving spirits in the Technology Club of New Bedford, which is one of the oldest and most loyal of the whole lot. He writes that the entire Tech Club of New Bedford intends to attend the Congress of Technology *en masse*. The writer has enjoyed the hospitality of the New Bedford Club two or three times and it is always a great pleasure to swap stories with the whalers on their own ground.—Dan Lufkin is vice-president of the Texas Company and is now located at 17 Battery Place, New York. Now that our classmate is near the center of the universe his long distance excuses will be of no avail and we shall expect to see him without fail at the next class dinner. —Jim Means who has strayed far from the fold has declared that after all there is nothing so satisfying as the Class of '85 and hereafter will be our star attendant.—Jean Grovernor who is one of the county commissioners for Essex County is another wanderer who is beginning to see the error of his ways and whose repentance is about due.—F. J. Kingsbury, Jr., who was with us during our first year and who is now president of the Bridgeport Brass Co., Bridgeport, Conn., is another one of our long lost brethren who has begun to feel the call of the old class and whom we hope to see at our meetings in the future.—From present indications there will be a generous representation at the Congress of Technology, April 10, of the Class of '85.—The Classes of '85, '86 and '87 have selected the same hotel for an *á la carte* dinner on April 10, at 6 p.m.—the Thorndike Hotel, English Room, after which we shall attend the smoker at Symphony Hall. There are particular reasons why every '85 man should attend the banquet at Symphony Hall April 11. Among those who will read papers at the Congress are: F. H. Newell, '85, on the "Reclamation of the Arid West," Tracy Lyon, '85, on "Scientific Industrial Operation," and H. P. Talbot '85, on the "Technical School Graduate; His Strength and his Weakness."—Arthur D. Little has been dashing across the surface of the globe in various directions during the last month or two taking in Europe and a considerable portion of North America

in an attempt to keep up with the enormous increase in the demands made upon him and his concern. The A. D. Little Inc. laboratory is now covering every field of engineering and engineering research as well as productive industry.—Frank Page was one of the dozen or fifteen Tech men who went to Panama with the civil engineering excursion recently.—The twenty-fifth anniversary picture book which is to embalm the experiences of our happy reunion last year probably will not be started until Oakes Ames' automobile breaks down so he can get time to print a complete set of pictures for the secretary.—Harry Barr is now connected with the Lamson Consolidated Store Service Company with headquarters in New York. His work has been connected with the installation of the mailing apparatus in the new Pennsylvania Terminal of that city.—Homer is one of the moving spirits in the rejuvenated Technology Club of Rhode Island at Providence, which is now one of the most flourishing and progressive of all local associations.

1886.

ARTHUR G. ROBBINS, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The following was taken from the minutes of the Cincinnati Commercial Club held April 16, 1910.—The death of a friend inclines one to be eager of expression, with perhaps a shallowness of judgment, and yet when we reach that time of life where we have to look into the great beyond to find most of our friends, then we see things as they are, and our expressions are but the reflections of a matured judgment.

Joseph Swan Neave was born September 16, 1865, and died after a brief illness, March 16, 1910. Thus is told the story of his birth and death—the history of his life he himself has written in letters of gold on the face of our community, and engraved it on the hearts of us, his companions. Do you remember the singular appropriateness of Pope's lines on Addison:—

> A friend to truth, of soul sincere,
> In action faithful, and in honor clear;
> Who broke no promise, served no private end,
> Who gained no title, and who lost no friend.

Courageous, loyal, forceful, hopeful, these were the qualities which made his life valuable to the public, coupled with the willingness and eager desire to make the world better because he lived in it. To his friends, to the inner circle, there was that charm of sincerity, that high bred courtesy, that frankness of speech and action, that absolute certainty of friendship, these were the qualities which endeared him to us, and so we feelingly, reverently and in deep sorrow inscribe this minute, in happy memory of Joseph Neave.

1887.

EDWARD G. THOMAS, *Sec.*, 36 High Street, Brookline, Mass.

The annual dinner of the class of '87 was held at Young's Hotel on the evening of February 18, this being the twenty-eighth consecutive year we have dined at this hotel. The following sixteen members of the class were present: Sever, Cameron, Very, Lane, Brainerd, Gay, H. D. Sears, Proctor, Hildreth, Adams, Curtis, E. G. and F. A. Thomas, Tripp, Stewart and Gerrish. The usual business, including the secretary's report and the report on the class fund, including the special Vose account, was duly carried through. Officers of the class for the ensuing year were elected as follows: President, F. M. Wakefield; vice-presidents, Henry Souther and F. M. Crosby. A committee of seven consisting of Lane, chairman, Souther, Sturges, Fish, Sever, Draper and G. Whitney, was appointed to consider and make such preliminary arrangements as seem necessary for the twenty-fifth anniversary of the class in the summer of 1912, and this committee was instructed to consider and carry through any form of memorial commemorating our quarter-century which they may deem wise. After the business was completed, the class listened with extreme interest to a stereopticon talk by Gerrish on the work of the Harvard Observatory and his particular duties there. It was a revelation to the men to learn of the great amount of work being carried on by the observatory, and the mechanical equipment which was very clearly shown and described by Professor Gerrish, was of especial interest because so great a part of it has been invented and constructed by him.

The secretary records with the very deepest regret the death of Frank F. Carpenter, of our class, on February 8. Carpenter did not complete his course with us, leaving to enter business and very early becoming engaged with the paper industry in which his business years were spent. At Winchester he was an honored citizen, a member of the park board and school committee, and for years a leader of the Republican town committee. He was a member of the William Parkman Lodge, A. F. & A. M., the Woburn Royal Arch Chapter, and the Hugh dePayens Commandery Knights Templar. Carpenter is survived by a widow, daughter and a son, the latter of whom is our "class baby," and who is today a tall young man of 22 years. Every member of our class will remember Carpenter as one of the most genial of our men, generous in impulse, helpful in word and action, and deeply interested in all Institute and class affairs. The secretary was directed to express to the bereaved family the sincere sympathy of all his fellow classmates.

New addresses:—F. F. Barbour, 455 Sutter Street, San Francisco.—Gelett Burgess, 327 Second Avenue, New York City.—

H. W. Kimball, Queen City Cotton Company, Burlington, Vt.—L. H. Olzendan, Room 1108, 347 Fifth Avenue, New York City.—Fred Thompson, United States Naval Coal Depot, Tiburon, Cal.—R. B. Young, Suite 67, Equitable Building, Boston, Mass.

1888.

WILLIAM G. SNOW, *Sec.*, 1108 Penn Mutual Building, Boston, Mass.

Richard Eppes' address has been changed to 24 Bolling Brook Street, Petersburg, Va.—Luther W. Bridges has been sojourning in California.—William H. Blood, Jr., spent a short vacation in Bermuda in March.—David A. Center's address is now 157 Washington Street, Gloucester, Mass.—Stone & Webster's latest general report shows the following interesting figures:

Combined statement of 31 independent Electric Railway, Electric Lighting, Gas and Water Power Companies under the management of Stone & Webster's organization—year ending December 31st, 1910:

Bonds and coupon notes outstanding	$68,328,500
Preferred, Common, and Capital Stocks outstanding	79,394,700
Total	$147,723,200
Gross earnings, 1910	22,023,126
Net earnings	9,771,211
Dividends paid	2,885,763
Balance	$2,066,811
Miles of equivalent single track operated	1,092
Passengers carried	286,943,000
Total connected electric lighting load equivalent to 16 cp. lamps	$2,094,920
Total commercial power load, approximately	112,100 H.P.
Total combined power station capacity, approximately	185,800 H.P.
of which 84,400 H.P. is generated by water power.	

The class dinner was held at the University Club, Boston, Mass., March 24.—Clarence B. Vorce is with the British Columbia Electric Railway Company, Limited, Vancouver, B. C.—Franklin Henshaw is located in Little Rock, Ark.

1889.

WALTER H. KILHAM, *Sec.*, 9 Park Street, Boston, Mass.

Gardner W. Pearson '89, has been appointed adjutant-general of the forces of the Commonwealth under Governor Foss. Pearson spent one year at the Institute, then three years in Harvard College and Law School, afterwards studying law with Gen. B. F. Butler and practiced with him until his death in 1893. Meanwhile he had been active in politics and was appointed in 1894 postmaster of Lowell by Cleveland. In 1897 he became interested in the militia and went out with Company C, 6th Regt., U. S. V., as a corporal in the Spanish war. He was promoted to be sergeant-major and lieutenant and after being mustered out returned to the ranks as a private. In 1900 he was elected lieutenant; in 1905 captain. Incidentally he served in 1892 on a commission to revise election laws and in 1900 was chairman of the committee on appropriations of the Lowell board of aldermen. His business is largely specialized on patent law, with offices in Lowell, Lawrence and Washington. As a military man he represents the progressive element of the National Guard and has been the leader in certain movements for the benefit thereof.—The annual meeting and dinner of the class of '89 was held January 30, 1911, at the University Club, with 15 present.—A letter from Edward Shepard, in relation to possible publications, was referred to the Alumni Council. The resignation of Jasper Whiting as a member of the Council was received and Henry Howard elected in his place. It was voted to change the date of the meeting to the last Saturday in February. Voted to have the next dinner at the University Club, Boston, and to try a dinner not exceeding $2.00 in cost. The gratifying responses to the call for assessments brought 56 responses. The opportunity is still open for those who have not sent in assessments to do so.—Mildram is now in business as Strachan, Mildram & Company, incorporated, public accountants and consulting engineers, 59 Temple Place, Boston, with branches at New York, Chicago, St. Louis, Minneapolis and Dallas.—Twenty-one members of '89 were present at the alumni dinner January 4, four of whom were at the head table in various distinguished capacities.—Hobbs, who is president of the National Association of Cotton Manufacturers, made an important address at the special conference recently held at Washington, D. C.—The engagement of E. J. B. Huntoon to Ida H. Vose of East Walpole is announced.—Charles E. Beals, who is field secretary of the American Peace Society at 153 Lasalle Street, Chicago, contributed an important article to the Sunday *Record Herald* of February 26, showing what the city of Chicago could do with the amount now contributed by it to the military expenses of the United States. The secretary is glad to say that Beals recommends that most of this sum, amounting to $41,000,000, should

be spent towards the architectural beautification of Chicago.—Williston is now located at 27 Kilsyth Road, Brookline, and is in close touch with preparatory work in connection with the opening of the new Wentworth Institute, which is in process of erection on Huntington Avenue, Boston.—Orrok read an illustrated paper on "Experiments on Transmission of Heat Through Tubes" at the Engineers Club of the Sheffield Scientific School on February 24.—Professor Crabtree, head of the department of metallurgical engineering, Carnegie Technical Schools, Pittsburg, Pa., returned last week from Arizona, where he investigated mining properties owned by Pittsburg stockholders.

1890.

GEORGE L. GILMORE, *Sec.*, Lexington, Mass.

Mr. H. P. Spaulding, the artist, held an exhibition of his oil and water color work in the Studio Building, Boston, during the week of March 6 which was very largely attended. Spaulding is planning a trip through the South soon and with his family will probably go abroad early in the spring for a long stay.—Mr. Andrew W. Woodman's home address is now 1111 Hinman Avenue, Evanston, Ill., his business being in Chicago.—Samuel Storrow is at 908 Wright & Callender Building, Los Angeles, Cal.—George A. Packard is in the Silver Bow Block, Butte, Montana, where he is engaged in expert mining work.—F. C. Moody is with the Missouri & Kansas Telephone Company, Kansas City, Mo.—Prof. Frederick S. Hollis is at 640 Woodruff Middle, Indianapolis, Ind.—Prof. H. M. Goodwin is receiving congratulations on the arrival December 14 of Richard D. Goodwin, 2d.—C. C. Babb is with the State Water Storage Commission at Augusta, Me.—Mrs. Eliza A. Bean is at Oxford, N.H. (Miss Eliza E. Bickford).—The residence of W. H. Collins is 63 McKinley Avenue, Norwich, Conn. Collins is superintendent of dyeing at the Norwich branch, of the United States Finishing Company.—Edwin F. Dwelley is at 38 Exchange Street, Lynn, Mass.—John E. Dolk, who was with the class for a short time, died October 5, in Berkeley, Cal. He was vice-president and general manager of the Dolk Gas Company of San Franciso and invented and installed the Municipal Salt Water Pumping Plant of Oakland, Cal.—Frederick Metcalf is with the Chase Machine Co., Cleveland, Ohio.—E. B. Raymond's business address is 1624 Frick Building, Pittsburg, Pa. Ned is now with the Pittsburg Plate Glass Co.—The death of Frederick B. Hall is reported under date of October 27, 1910. Hall will be remembered by Course II. men, as he was with us for four years, and in his freshman year was one of the halfbacks on the class football team which scored a victory over '89.—C. O. Churchill is president and secretary of the Westfield Foundry and Valve Company.—Winthrop Coffin, a special of the class of '90,

Boston banker and traction expert, commenced in December an active investigation of the Cleveland Electric Railway and three-cent fare as a financial risk under the Taylor franchise. On Coffin's report will depend whether or not Wall Street will finance the needs of the company without an increase in the maximum rate of fare in the grant to five cents cash and six tickets for a quarter. One matter in which Coffin showed special interest was the franchise in suburbs where five-cent fare is in force. The terms of these franchises, the amount of traffic carried under them and the probable further growth of this traffic will largely control his decision. These suburban fares, together with the penny transfer charge, have put the average rate over the system at slightly more than 3½ cents. A total of $12,000,000 is needed by the Cleveland Electric line, $2,500,000 for new cars and power equipment and $9,500,000 to refund old bond issues and pay off floating debt.—At the annual meeting of the New England Bureau of United Inspection, Edward A. Northey was elected clerk and manager.—The name of George E. Hale has been before the public very prominently the last few weeks through the further $10,000,000 contribution by Carnegie to the Carnegie Institute. Hale's work in astronomy places him as one of the leading if not the leading astronomer in the world.

1891.

HOWARD C. FORBES, *Sec.*, 88 Broad Street, Boston, Mass.

Remember June 3, 4, and 5, at Osterville! The committee wants suggestions and ideas from everyone. Is there anything you would like to do, or to have done? Write!—Aiken went to Havana, Cuba, on business during February, and ran across Ricker there, and also found that Tom Keene was in town but did not see him. Ricker is assistant general manager of the Havana street railway.—The Bay State Dredging Company, Ltd., has incorporated under the laws of Massachusetts with Hatch as president, and offices at 247 Atlantic Avenue, Boston.—Holmes has been elected treasurer of the Plymouth Cordage Company, taking the place made vacant by the death of his father.

1892.

W. SPENCER HUTCHINSON, *Sec.*, 1235 Morton Street, Mattapan, Mass.

Arthur J. Ober is still located at Newport, R. I., where he has charge of the fortifications work for the government in the district under charge of Lt.-Col. J. C. Sanford, Corps of Engineers, U. S. A., Newport, commanding Narragansett Bay. It is one of the important strategical points of the coast and we confidently look

to Ober to "hold the forts."—Harry J. Carlson, 89 State Street, Boston, took a trip to Jamaica and Cuba last fall and reports that business has taken him, during the winter, to New York, New Jersey and Minnesota. He has just been elected a Fellow of the American Institute of Architects.—John A. Curtin was re-elected a selectman in the town of Brookline at the town meeting on March 2.—Henry M. Phillips is at East Pittsburg with an office at the Westinghouse Electric and Manufacturing Company's factory, representing the United States Navy Department. He passes on all Navy work from the Westinghouse factory. —Walter M. Newkirk has left Detroit where he has been for a number of years with the Buhl Malleable Company and the Detroit Embossing Machine Company, and is now engineer for the William & Harvey Rowland Corporation of Philadelphia, the leading manufacturers of the country of automobile and vehicle springs. He has been with them since September 1, 1910, and is living at Bryn Mawr.—George H. May has come back to Boston and announces his permanent address at Gray Cliff Road, Newton Centre, Mass. He has sold out his imitation leather business, the Fabrikoid Company, and has retired from active business. He expects to be around Boston the coming summer but plans to start on a six months' trip around the world next October.—Joseph B. Lukes is with the Stone & Webster Management Association and is in charge of their enterprises at Reno, Nevada, the Sierra-Pacific Electric Company.—Prescott A. Hopkins has left Philadelphia and come to Boston. He is with Andrews, Jacques & Rantoul, architects, 50 Congress Street, Boston.—Charles P. Holland, Brockton, Mass., has followed banking ever since he left Tech and for three years has been treasurer of the Plymouth County Trust Company at Brockton, Mass.—Henry D. Shute is acting vice-president of the Westinghouse Electric and Manufacturing Company. He went to Pittsburg in 1893 and has been connected with the East Pittsburg factory of that company continuously since. Beginning at the bottom round he has worked up to one of the highest positions. Shute is still a bachelor.—Albert A. Pollard announces a change of address to 310 Kasota Building, Minneapolis, Minn. He completed his work on St. Mark's Church in October and is practicing architecture on his own account. He read a paper on "Economical Applications of Concrete in Rural Construction" at the recent Convention of Northwestern Cement Users Association at Minneapolis.

Edward R. French died at his home in Elizabeth, N.J., November 5, 1910. He entered the Institute with the class of '92 and continued the entire four years taking his degree in the Course in Electrical Engineering. He is remembered by his classmates as a fine fellow, an earnest, hardworking student;

a sincere, conscientious man; a thorough gentleman and withal unassuming and reserved. After graduation he went with the Public Service Corporation of New Jersey and at the time of his death was superintendent of the Central Division of its railways. He left a widow and a son.

Allen French is the author of "The Siege of Boston" just published by the Macmillan Company. It is one of a series of stories of American History issued by these publishers.

1893.

FREDERIC HAROLD FAY, *Sec.*, 60 City Hall, Boston, Mass.
FREDERIC H. KEYES, *Asst. Sec.*, 88 Broad Street, Boston, Mass.

On the evening of the Alumni Smoker held during the Congress of Technology, Monday, April 10, the class will meet informally for dinner at the Boston City Club, 9 Beacon Street, at six o'clock, after which the members will attend the Smoker.—Edward B. Carney, first vice-president of the class, was elected president of the Merrimack Valley Technology Club at the annual meeting held at the Yorick Club, Lowell, Mass., on February 15. At this dinner meeting Henry A. Morss was the guest and principal speaker.—W. W. Crosby has just been reëlected for a term of three years to the Woburn School Committee, and is also a trustee of the Choate Memorial Hospital and of Warren Academy. He is a member of the firm of F. W. Dean, Inc., mill engineers and architects.—Herbert N. Dawes sailed for Porto Rico, Saturday, March 18, in connection with business for the Cerro Gordo Fruit Company, and expects to be back some time in April.—Fred N. Dillon has just returned fron a trip through the Mediterranean, having visited Gibraltar, Algiers, Nice and Naples. S. Parker Bremer accompanied him as far as Naples on the steamer *Caronia*.—Frederic H. Fay is engineer in charge of one of the three divisions of the newly created Public Works Department of Boston of which Louis K. Rourke, '95, is commissioner. This department was formed by the consolidation of the former engineering, water and street departments, and has charge of all engineering construction work directly controlled by the city. In addition to its division staffs of engineers there is a maintenance force in the several branches of the service numbering in all about thirty-five hundred men. Each division is under the charge of a trained civil engineer. One division, the sewer and water division, has charge of all underground work; the highway or "overground" division has control of the street paving, cleaning, lighting and sanitary work; Fay's division, known as the bridge and ferry division, has charge of the building and maintenance of the city bridges and ferries, and in it is also included grade crossing work and a variety of consulting engineering work formerly done

by the city engineer. Fay has also been appointed commissioner, for Boston, of the Boston and Cambridge bridges. The placing of municipal administrative work under the control of technically trained men rather than under men trained in the school of politics is something of an innovation for American cities and is an experiment which is being watched with some interest.—Charles F. Hopewell is now connected with the firm of Hopewell Brothers, Newton, Mass. This firm was formed in 1906 to manufacture automobile tire covers and other fabric goods; and is today the second largest manufacturer of tire cases in the country. The firm has a large export trade, having shipped 1,500 tire covers to France in January. Hopewell still maintains his machine shop at Cambridge, and is interested in engineering work as well as the tire cover business.—Simeon C. Keith, Jr., chemist and industrial biologist, has been appointed assistant professor of bacteriology on the staff of the sanitary research laboratory of the Institute. This laboratory—supported through the generosity of an anonymous donor who has contributed to date, $50,000 for the work—has been located, since its establishment in 1902, on one or another of the trunk sewers, at present near the pumping station in Dorchester, and it is making a thorough study of the sewage of Boston.—Harry M. Latham is secretary of the newly formed Technology Club of Worcester, Mass., which he was instrumental in organizing this winter in connection with the State Aid campaign. —H. A. Morss was elected a term member on the Corporation of the Institute, March 8, 1911; '93 is the youngest class represented on the Corporation.—A. F. Bemis took a portion of the course at Colorado College, Colorado Springs, Col. The college, being desirous of having a trustee in Boston, elected Bemis a member of the Board of Trustees some time ago and he is serving in that capacity at the present time. Most of the trustees reside in Colorado, but there are two in New York City, Bemis being the only one in Boston.—Frederic C. Sutter's address is 807 Fort Street, Detroit, Mich.

1894.

PROF. S. C. PRESCOTT, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

McKibben, who since leaving the Faculty of the Institute several years ago has been the head of the civil engineering department at Lehigh University, South Bethlehem, Pa., is one of the members of the large party of members of the American Society of Civil Engineers which has recently visited the Panama Canal. Readers of the *Engineering News* will doubtless get editorial opinion as to the quality of the work done at Panama, as McKibben is a member of the editorial staff of the *News* and spent a large part of last summer in active editorial work. He writes that he enjoys this kind of work very much, and finds it an

interesting and valuable part of his engineering experience.—George Anderson has returned to the vicinity of Boston and is now located at Shirley, Mass.—Tenney is actively interested in the management of the Suburban Gas Company, a large company controlling the light and power of a long chain of towns and cities in Massachusetts and New England.—Loring has left Montreal, where he has had headquarters for several years as an agent of the Hoe Press Company, and is now the president of the Goss Printing Press Company, and makes London his headquarters. Any members of the class or others who happen to be in England can probably learn of his whereabouts by calling at the office at 90 Fleet Street. As agent for the Hoe Company, Loring went over a good share of the world. Loring, Mason, Chace, Schiertz, and Robeson make a quartet of globe trotters or globe workers which it would be hard to beat. Their fields of industry have included all parts of the United States including Alaska, Canada, Mexico, England, France, Germany, China, Japan, South America and South Africa. Schiertz has spent a portion of the winter in Boston, having returned here from his work in China by way of India and the Suez. He spent some time in Germany, visiting relatives, and also "took in" other parts of the Continent. The secretary expected to get a big story from him, but as he has been in Boston so little this has been impossible.—The following men attended the alumni dinner at the Somerset on January 4: Adams, M. S. Chace, H. W. Gardner, F. C. Green, Ferguson, Hopewell, Haven, Nash, Lawrence, Piper, Prescott, H. S. Reynolds, Scott, Wood. The class was honored by the presence of Frank Green, '95, and Walter Piper, '94, at the head table.—A recent dispatch from Washington thus describes the work of our distinguished classmate C. G. Abbot, who has for several years been the director of the Astrophysical Observatory of the Smithsonian Institution:

Washington, March 20—Marked advances in the science of agriculture and a long-distance weather forecast will be made should an investigation now being conducted by the Smithsonian Institution prove that the radiation of the sun varies producing a corresponding change in the earth's temperature. Dr. C. G. Abbot, director of the astrophysical observatory of the institution, confidently predicts that the sun variation theory will be proven, which would constitute great astronomical achievement. To complete the tests which have been and still are being made at the observatory here in Washington (sea level), Mount Whitney (three miles elevation) and at Mount Wilson (one mile elevation) Dr. Abbot finds it necessary to establish a station in the cloudless region of southern Mexico. Observations will then be taken at the new station and at Mount Wilson simultaneously, and if the two sets of measurements should agree the conclusion will be proved. Congress has provided for this trip to Mexico by adding $5,000 to the appropriation regularly made for the work of the astrophysical observatory to the intense gratification of Dr. Abbot and Secretary Walcott of the Smithsonian Institution, as they are hopeful of success attending the undertaking. While the expedition will not set out for Mexico until next July, when it is hoped peaceful conditions will be restored in the southern republic; the work of preparation already is under way. In speaking of the work Dr. Abbot says:

"When we began to make these measurements there was nowhere in the world any exact scale of measurement of radiation, although physicists had been working in devising instruments for that purpose for about sixty years. Still there remained an uncertainty of 5 to 10 per cent. in the scale of pyrheliometry, as it is called. We have devised several instruments to be used as standards for that purpose, and in this last year we have made a careful comparison of two of our instruments of the most improved type and these agreed perfectly in fixing the scale of measurements. This apparatus is used now as a standard by which to standardize other apparatus which has been sent around the world. We have sent instruments to France and Italy and have requests for them from Argentina, Peru and other countries.

"Our measurements at Mount Wilson have been carried on for several years. The first expedition was in 1905, and we have observed almost daily for six months of each year from 1905 to 1910, excepting in 1907. In 1910 I was fortunate in having two weeks of good weather on the summit of Mount Whitney, which is the highest mountain in the United States. I carried on there complete measurements which were simultaneous with those carried on at Mount Wilson. We have found that the results obtained at Mount Whitney check and substantiate completely the work we were doing at Mount Wilson. Therefore having established a standard scale of measurement and having shown that we get the same results at Washington, Mount Wilson and Mount Whitney, we are now able to state the value of the solar constant of radiation. This value is of an importance equal to that of the distance of the sun in astronomical work. Our measurements show a range of the value of the solar radiation outside of our atmosphere of about 8 per cent.

"Now by taking stations so far apart that no local condition in the atmosphere can affect them both, we may actually prove whether or not these variations are in the sun or are something that we have not eliminated in the atmosphere. If we find them in the sun we shall have made a discovery of the first rank. It is clear that if the sun varies, the temperature of the earth must vary correspondingly, perhaps not always the same in all stations, because the earth is so affected by the presence of water and mountains and the like that not all stations would behave exactly alike; but yet we will be able to find a relation between the radiation of the sun and the temperature of the earth that will be so important to the meteorological service of this country and abroad that undoubtedly this work we are doing will be continued daily at several stations over the world if we shall prove the variation of the sun."

The appreciation of the work that Dr. Abbot is doing is shown in the fact that during the last year the Draper gold medal was awarded by the National Academy of Sciences to Dr. Abbot for his valuable researches in solar radiation.

1895.

GEORGE A. ROCKWELL, *Sec.*, 101 Tremont Street, Boston, Mass.

Copies of the booklet relating to the reunion of last spring were sent to the secretaries of all the other classes and letters of acknowledgment have been received. It is hoped that these booklets will accomplish much in the way of inducing other classes to hold reunions.—Mr. L. K. Rourke is giving great satisfaction as Commissioner of Public Works of the city of Boston and is in much demand as a speaker at civic and other gatherings. His idea of consolidating three of the large city departments under a Commissioner of Public Works has been embodied in an ordinance which has already gone into effect.—The annual winter dinner of the class was held at the Boston City Club on February 7, 1911. The following were present: J. L. Newell, W. S. Williams, F. T. Miller, W. D. Parker, H. K. Barrows, J. E.

Walworth, R. J. Williams, A. D. Fuller, F. L. Richards, E. H. Clapp, John H. Gardiner, G. A. Cutter and G. A. Rockwell. An interesting discussion was had after the dinner as to State Aid and other matters. Later the men adjourned to the pool room and had some exciting games of cowboy pool.—The following changes of addresses are noted: Perley H. Blodgett, P.O. Box 542, New York City.—W. C. Brackett, 10 Bridge Street, New York City.—B. J. Clergue, 235 W. 103d Street, New York City.—Arthur S. Coburn, 15 Huntington Street, Lowell, Mass.—F. W. Draper, Arizona Smelting Company, Humboldt, Arizona.—F. A. J. FitzGerald, FitzGerald & Bennie Laboratories, Niagara Falls, New York.—E. H. Huxley, care of National India Rubber Company, Bristol, R.I.—John D. J. Moore, 30 Church Street, New York, N.Y.—F. C. Schmitz, 220 11th Avenue, New York City.—Walter S. Williams, care of A. D. Little, 93 Broad Street, Boston, Mass.—Frederick A. Woods, 1006 Beacon Street, Brookline, Mass.—E. D. Barry, 524 Frick Building, Pittsburg, Pa.—A. L. Canfield, 40 Wall Street, New York City.—S. S. Clark, 603 Palace Building, Minneapolis, Minn.—A. W. Drake, 1006 Havemeyer Building, New York City.—John H. Gardiner, 158 Purchase Street, Boston, Mass.—John H. Gregory, 17 Battery Place, New York City.—F. W. Harris, 97 Mamaroneck Avenue, White Plains, N.Y.—Geo. E. Howe, care of Lyon & Greenleaf, Wanseon, Ohio.—T. M. Lothrop, 5458 Jefferson Avenue, Chicago, Ill.—H. N. Rust, 42 W. Market Street, Wilkesbarre, Pa.—E. P. Schoentgen, Box 551, Council Bluffs, Iowa.—T. H. Wiggin, care of Board of Health Supply, 165 Broadway, New York City.

Changes in addresses: C. W. Berry, M. I. T., Boston, Mass.—W. C. Brackett, 54 Union Street, Boston, Mass.—B. J. Clergue, 90 West Street, Room 711, New York City.—F. A. Hannah, Hotel Belmont, New York City.—H. M. Haven, care of F. W. Dean, 53 State Street, Boston, Mass.—O. E. Littlefield, M. I. T., Boston, Mass.—Reid McManus, 105 Church Street, Moncton, N.B., Canada.—F. B. Masters, 10 Fenwick Road, Winchester, Mass.—G. H. Matthes, Central Colorado Power Company, 1210 17th Street, Denver, Col.—A. E. Zapf, 248 South Walnut Street, Freeport, Ill.—The following letter has been received from F. E. Matthes:

I feel I rather owe it to the class by this time to give an account of myself. The more so as I missed the reunion last summer—a camping affair, too, I understand, which must have been particularly conducive to ebullitions of good fellowship. But I was just getting ready for a camping trip of my own, at the time, and a protracted one at that, out on the other edge of the continent. All last summer I had been campaigning on the Mount Rainier National Park and laying siege to the mountain itself. It is a glorious mountain fondly believed by the dwellers of Seattle and Tacoma (who are still carrying on a desultory scrap as to whether it shall be Mt. Tacoma or Mt. Rainier) to be the tallest peak within the confines of the United States. I found it is not, but that does not detract a bit from it; there is no grander, superber thing of its kind anywhere. The Fuji-Yama of North America, it rises

like an isolated, snow-capped cone in one magnificent sweep from sea level to a height of nearly 14,400 feet. Better than Fuji, it is laden with gorgeous snow and ice fields that stream down on all sides into long, crevassed glaciers extending down to the very foot. Again, each ice stream has entrenched itself in a profound canyon, leaving only a narrow, rocky rib or cleaver, as it is aptly termed, to separate it from its neighbors on either side. Geologically speaking, the mountain is a truncated volcano, the upper two or three thousand feet of which (a thousand feet more or less on that mountain does not make nearly as much difference as a half inch on the end of a man's nose) once blew off in a great explosion. Two new craters have since built up alongside of each other and it is the snow pile between them that constitutes the present summit. The crater rims themselves are bare, but there is a sufficient heat even today to keep them free from snow. In fact, steam is continually rising along the edges of the craters although their interiors are filled with snow. The proposition is to make a detailed topographic map of the mountain and the park (a wilderness it really is) surrounding it. I have found it an undertaking worthy of my steel. The mere determination of the height of the mountain is an engineering problem in itself. It will have to be solved by triangulation methods, for precise levels are naturally out of the question. But even triangulation will be fraught with difficulties owing to the isolation and the great height of the peak. Fortunately the Creator in His infinite bounty placed the Tatoosh Range where it might be handy to triangulators. (I think "handy" is the proper term, for one instinctively goes on all fours when climbing it.) Its summits provide excellent stations, and it was from them that most of the work last summer was carried on. But the highest peak of the Tatoosh Range is none too high. From it a vertical angle to the crater measures 12 degrees, 50 minutes, more than double what is usually considered safe. And that at a distance of nearly seven miles! Inasmuch as the summit proper is invisible from the Tatoosh Range, it became necessary to erect a triangulation target on one of the crater rims. Accordingly an ascent was made of the mountain, and later a second, to map the craters themselves. One does not care to do that sort of thing very often. It is customary to start at 1 a. m. By sun rise one has climbed 5,000 feet. Five thousand feet in most mountains is all one expects to do in a day. But on Rainier the first five thousand feet don't count. The remaining four thousand four hundred make up for it, however. We can speak feelingly and understandingly on the subject. We were unfortunate as regards weather conditions. On both occasions there was some fog and snow. But the second time was the worse. The wind had hurricane strength and drove ice and lava particles with great velocity through the air, so one could scarcely face it. It threw us off our feet at times, but fortunately without dire results. The crater rim we took by successive rushes between gusts, and once inside we found ourselves fairly well protected. But the height of Rainier has not been finally settled yet. Early snows in October interrupted the work, covering up for the time, at least, our stone cairn on the crater. So we look forward to another season on Rainier. Should any of the class or their friends have intentions to travel out that way, don't let them hesitate to drop in at camp. It is a sort of social center anyway, and I am the man that owns the mountain (they say). Last summer thousands and thousands of tourists visited the park, and I know they went away delighted. It is very accessible, either by rail or automobile, from Tacoma or Seattle, and the new government road is all that can be desired. But one caution! Don't be too ambitious. Don't think you are in a fit condition to tackle Rainier when you have been traveling in a cushioned car for days. Many people make the climb that have no business to do so, and I know of cases where permanent injury to health has resulted in consequence.

1896.

PROF. CHARLES E. LOCKE, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

A. LeBaron Russell, who has been connected with the bond house of E. H. Rollins & Sons in Boston, is now located in Phila-

delphia, where he has charge of Rollins' branch office.—Jimmy Smyser is at present located in Boston, where he is engaged in looking after some of his own patents.—Charlie Stone, Course V, reports change of address, and he is now with the Orange County Lighting Company, Middletown, N.Y.—W. A. Wood, who has been missing in the register of graduates for the last two years, has been found again, and his address is 255 Warren Avenue, Detroit, Mich.—John Tilley has made a move during the past year and is now with Marc Eidlitz & Son, builders, 489 Fifth Avenue, N.Y.—The secretary was in New York the middle of January, and undertook to look up some of the '96 bunch, but found most of them out. Sager was located in his office. He is busy chasing over the country attending to the calls which come to him as a patent lawyer.—Ruckgaber reported that they were not working very hard this winter, some of the jobs which they had on hand having been shut down on account of the cold. His specialty is concrete construction.—At the annual alumni dinner at Hotel Somerset on January 4, '96 turned out eleven members as follows: M. E. Pierce, George Harkness, E. C. Hultman, A. W. Thompson, J. A. Rockwell, C. W. Hapgood, H. C. Lythgoe, A. D. Maclachlan, C. W. Tucker, J. G. Callan, C. E. Locke. An attempt was made at that time to extract some news from the bunch but without much success. Harkness acknowledged that he had changed his job and that he is now with Holbrook, Cabot & Rollins, Boston engineers, and George's particular job is to look after the construction of the new fish pier in South Boston. Pierce owned up to a fondness for pure milk which has caused him to push the bill for pure milk now causing considerable discussion before the Massachusetts legislature. Pierce is not happy unless he is doing something for the public welfare.—An informal class dinner of the '96 men who are located around Boston was held at the Technology Club on Monday, March 6, 1911. The following were present: C. E. Batchelder, J. G. Callan, J. M. Driscoll, Joe Driscoll, M. L. Fuller, H. S. Gilman, F. C. Hersey, Joe Hewitt, E. C. Hultman, H. C. Lythgoe, A. D. Maclachlan, E. S. Mansfield, J. A. Rockwell, F. H. Smith, C. B. Tower, C. W. Tucker, S. F. Wise, C. E. Locke. The class also had as its guest Mr. I. W. Litchfield of the class of '85 and Dr. Frank E. Schubmehl. Litchfield spoke upon the first reunion which the class of '85 held at Doctor Schubmehl's camp, which was so enjoyable that the men would not consider any other place when it came time to hold another reunion last year. Doctor Schubmehl explained the location of the camp, the conveniences, and the opportunities for enjoyment. It is used as a regular boys' summer camp beginning in the latter part of June. After hearing what these two men had to say, the men present would not even suggest that we hold our reunion at any other place than Sherwood Forest, and the matter of location may therefore be considered

as definitely settled. The date which was originally proposed was June 2 to June 6, with the idea that the men could return to Boston in time to attend the Tech night at the Pop Concert on Tuesday, June 6. The season in New Hampshire, however, is about two weeks later than Boston, and it was feared that if we went too early we might encounter cold weather, and it is now proposed that the reunion be held June 15 to 18. This is especially advantageous to the men in Boston, because June 17, Bunker Hill Day, is a holiday and comes on Saturday this year. Before adjourning the class voted that the secretary be empowered to make the necessary arrangements and to appoint such committees as may be necessary. For details of the reunion of other classes at this place, the men are referred to THE TECHNOLOGY REVIEW of last October. There is good train service from Boston to Meredith, N.H. (about three hours), and from Meredith the Asquam Auto Stage meets the trains to take passengers one mile to the lake, where a boat is secured to traverse the remaining four miles to the camp. Good automobile roads exist right into the camp. The camp will accommodate fifty men easily and more by a little crowding. There are splendid opportunities for recreation, swimming, tennis, boating, fishing, etc. The town is a mile distant, but the camp is sufficiently isolated to allow the men to be perfectly free to do as they please. Now that the date and the place are definitely settled, every man should make up his mind to be present if possible, and should also communicate with his friends to determine whether or not he can get them to go with him. It is intended that circulars will be issued in the near future giving full details of the whole matter.—Several of the '96 men in New York got together for a dinner at the Technology Club of New York on Wednesday, March 8, and the following report has been sent by Charlie Lawrence. The party included S. D. Crane, T. I. Jones, C. E. Lawrence, H. C. Stevens, Bradley Stoughton, John Tilley, J. E. Woodwell, C. H. Young. As guest of the evening was Mr. F. B. Cutter, '95, who related his personal experiences at Doctor Schubmehl's camp last summer. Several other men had planned to be present, but were prevented from doing so either by absence from the city or other circumstances which kept them away at the last moment. It was extremely gratifying to note the growth of enthusiasm as the discussion progressed, and it was easy to see that each of those present at this dinner, if possible, would join in celebrating our fifteenth anniversary. The result of discussion was a decision to consider going in a body from New York perhaps in automobiles, to some point in Massachusetts, possibly North Adams, and proceeding from that point by rail to the camp, leaving the autos at North Adams for the return journey. Owners of cars generously offered their use for such a party. A canvass was started of all '96 men within a radius of two hundred miles of New York City. The

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WILLIAM K. FAIRBANKS, '97

general opinion was that the date should not be earlier than the middle of June. The following quotation is taken direct: "At the close two rousing cheers were given, one being the Tech yell and the other the yell of '96, for which we were loudly applauded by other members of the club, dining in adjoining rooms. You can count on the New York men to coöperate in every possible way to secure a good attendance at the fifteenth annual reunion." —*The Scientific American* of February 4, 1911, contains a description of the methods of handling mail in the new Pennsylvania depot in New York City. The apparatus includes trucks, spiral and direct chutes, belt, conveyors with trippers which deliver the mail automatically inside the door of the mail car. Incoming mail is handled by belt conveyors and plunger elevators. The following is quoted direct, commenting on Mr. Woodwell's work:

> The task was to install a complex machine for executing one of the primary functions of a railroad station—mail handling—in waste underground space that had already been reduced to the lowest practicable amount by the unalterable plans of the architects of this unique building. This problem, in which the post-office department was so vitally interested, was entrusted to a mechanical engineer who had already demonstrated special ability and resourcefulness in government work in the treasury department, Mr. Woodwell, of the firm of L. B. Marks & J. E. Woodwell, consulting engineers, New York City. His solution, a most remarkable one, in departing almost entirely from conventional methods, by reason of the inflexible restriction above referred to, has proved a success in the uninterrupted facility with which the mails have been handled from the start. The electric-motor operated apparatus for handling the outgoing mail was put into motion coincidentally with the opening of the new railroad station and worked without a hitch, thus demonstrating on the first test the capacity, speed and smooth working of the machinery.

1897.

JOHN ARTHUR COLLINS, *Sec.*, 67 Thorndyke Street, Lawrence, Mass.

An informal dinner and reunion of '97 men was held on Tuesday evening, January 31, at the City Club, Boston. Thirteen were present as follows: Bradlee, Breed, Worcester, Hopkins, Lamb, Sawtelles—Billy and Harry,—Olin, Russell, Burdick, Hosmer, Fuller and Collins. A jolly evening was spent, although saddened somewhat by the news brought by Lamb of the death of our classmate, Kendall Fairbanks. (Further details of this event are given elsewhere in this issue.) The dinner had been planned by a committee consisting of Bradlee as chairman, Worcester, Hopkins, Breed and Lamb, and was most successful, although it would have been—in fact *should* have been—attended by a much larger number. Quite a number of men who live in and around Boston failed to appear, while on the other hand several came over one hundred miles to be present. So happily was the even-

ing spent that before breaking up, it was voted to hold a similar gathering on Tuesday evening, March 28, at the Colonial Club, Cambridge. Dinner will be served as before, and it is planned to have some bowling matches afterwards. Due notice will be sent out later in regard to this. The secretary hoped that many of the fellows would send him word of any changes in position, or of some events that would interest their classmates. But thus far not 5 per cent. of three hundred and fifty have replied, so he has accepted the usual and inevitable result.

"Gus" Lamb recently informed the secretary that *last June* he was promoted from the New York office of the American Writing Paper Company to the general offices at Holyoke. So I am transmitting the news (?) late though it be, to all who may or may not be interested. If the fellows who make changes would simply send a note of the same to the secretary, it would help him to keep this column up to date. By the way, one of the features at the reunion at the City Club on January 31 was Lamb's singing of his old-time favorite, "D'ye think I am too small, d'ye really think I am?"—Gilmore (VI.), for fifteen years with the Stanley Electric Company of Pittsfield, particularly in the transformer testing department, has resigned, and is now with the Electric Bond and Share Company, whose principal office is in Schenectady, but with a branch office at 71 Broadway, New York City.—W. G. Hill (V.), is with the Apsley Rubber Company of Hudson, Mass., makers of rubber boots, shoes and clothing.—H. D. Jackson (VI.) who is associated with T. W. Sprague and F. H. Keyes as consulting engineer, reports work being done on a design for a power plant for a coal-mining station in West Virginia, plans for a shoe factory in Marlboro, and also testing for electrolysis in various sections of New England.—From the catalogues of engineering books we learn that Blood (I.), in collaboration with Walter E. Silsbee, has issued a book on Special Railway Work, which is described as "a valuable collection of data on special track work, which has not hitherto been published, nor been available outside of a few special offices."—Also that Sellew (II.) has in preparation a book on the Steel Rail, taking up in detail the development of the present section, the pressure on the rail, supports and stresses of rails, and a comparison of standard specifications. The book will be published by D. Van Nostrand Co.—Wadleigh (II.) is at present in St. Louis, superintending extensive changes in power plants belonging to the Bemis Bros. Bag Company, with whom he has been connected for some years.—Hammond (I), who is with Conners Bros. Company of Lowell, general engineering contractors, has just returned from Porto Rico, where he had been in connection with some work.

KENDALL FAIRBANKS.

By the death of Kendall Fairbanks, '97 loses one of its most jovial members and one who believed in keeping up class organization, class spirit and class interest. He was present at all the various dinners and reunions held since our graduation, and no one contributed more on those occasions to the jollity of the event than did he. The last time he was with us, was at the meeting at the Ferncroft Inn, in 1909, and that evening will long be remembered by those who were there.

For a period of over a year, Fairbanks faced a very critical condition and after many consultations it was decided to perform an operation. This operation was to relieve the pressure of the optic nerve at the base of the brain caused by glandular enlargement. But one similar operation had previously been performed and at first it was believed that the operation on Fairbanks had been successful. The patient rallied well, but complications set in and death resulted. At the funeral services, which were held on Wednesday, February 1, from Mt. Auburn chapel, Bradlee, Hopkins, Humphries and Eames were in attendance and a floral offering was sent from the class.

1898.

ERNEST F. RUSS, *Sec.*, 70 High Street, Boston, Mass.

It is with deep regret that we learned of the death of Thomas Wendell Bailey on December ninth last year.

F. L. Bishop is at the University of Pittsburg.—William D. Blackmer can now be reached in the Wright & Callender Building, Los Angeles, Cal.—Ira M. Chase, Jr., is in New Bedford.—Hurter, Charles S., is back again in Wilmington, Del.—Edward P. Lane's address is 335 Madison Avenue, New York City.—William A. Marshall, who, up to a few months ago, was with the New England Gear Works in Boston, has gone to investigate some mining property at Austin, Tex., and can be reached care of Austin Manhattan Consolidated Mining Company.—Muhlig, J. F., has gone to Burlington, N.J. His address is 207 East Union Street.—Packard, A. A., is in New York City.—Charles H. Pease, who for a number of years has been located in Boston, is now in Marlboro, N.H., with the Monadnock Blanket Mills.—Perley is now at Lowell, Mass., and his address is Box 433.—Shirley S. Philbrick's concern is Philbrick & Foster. He is still in the State of Washington, at Clarkston.—W. W. Staples is at St. Louis, Mo.—Winslow writes from New York City that Edgerly and Lansingh have recently been elected to the Board of Governors of the Technology Club of New York.—Coffin has been appointed

Assistant Professor of Physics at the College of the City of New York.—Roger Babson has recently inaugurated a new branch to his statistical work which promises to be of wide interest in the business world. Already he has a splendid system of statistics, and with this as a basis he forecasts business conditions a number of months in advance. His articles on finance, which have recently been published in the *New York Sunday Times*, have attracted wide attention.—Cutter has an office at 50 Church Street, New York City, where he deals in second hand machinery of all sorts.—Edgerley has left his old position to become secretary of a new company, the Debevoise Company, dealing in paints and oils.

Announcement was made yesterday by Horace De Lisser, vice-president of the United States Motor Company, of the appointment of David C. Fenner as sales manager for the Alden-Sampson Manufacturing Company. Fenner has had eight years experience in the automobile world and knows freight and delivery motor organization and selling. He is a graduate of Yale Sheffield and Massachusetts Institute of Technology. After five years with the Bethlehem Steel Company he joined the Knox Automobile Company. He succeeds C. E. Stone, who has been appointed manager of the New York office of the company.

1899.

H. J. Skinner, *Sec.*, 93 Broad Street, Boston, Mass.

S. B. Robertson has recently been appointed superintendent of the Erie & Ashtabula Division of the Pennsylvania lines west of Pittsburg.—The engagement of C. G. Barry to Miss Martha Imogene Stevens was announced recently. Barry is with the Cape Cod Construction Company on work in connection with the Cape Cod canal.—A. L. Hamilton is president and treasurer of the International Tag Company, 661 West Lake Street, Chicago.—F. F. Fowle's second son, William Cowper Fowle, arrived recently. Fowle writes: "Bill is a fine, husky lad and will soon be able to give his big brother a run for his money."—Haven Sawyer is with the Boston & Idaho Gold Dredging Co., Idaho City, Idaho.—The following changes of addresses have been received: Newton D. Benson, Circuit Drive, Edgewood Station, Providence, R.I.—Willard T. Cannon, 424 Judge Building Salt Lake, Utah.—D. C. Churchill, 287 Fourth Avenue, New York, N.Y.—Charles D. Drew, J. G. White & Co., Ltd., La Calera, Cordoba, Argentina.—Dwight Farnum, 400 Ernest & Crammer Building, Denver, Col.—John B. Ferguson, J. B. Ferguson & Co., Hagerstown, Md.—Fred A. Fifield, 189 Dowling Avenue, Toronto, Ont.—G. R. Heckle, W. J. Dickey & Sons, Oella, Baltimore County, Md.—Henry H. Hewitt, 901 Mining Exchange, Denver, Col.—Frank J. Huse, 2624 Thayer Street, Evanston, Ill.—Henry

P. James, Cutler-Hammer Manufacturing Company, Milwaukee, Wis.—A. Wallace McCrea, 23 East 15th Street, New York, N.Y.—W. Scott Matheson, 218 18th Avenue, North, Seattle, Wash.—Carl S. Milliken, 950 New York Avenue, Pasadena, Cal.—Charles, B. Page, Pennsylvania Iron Works Company, Eddystone, Pa.—W. Rogers Parker, 11 Court Street, Arlington, Mass.—Lewis W. Riddle, 651 First National Bank Building, Chicago, Ill.—Edwin R. Sheak, 10 Beech Road, Brookline, Mass.—Frederic B. Stearns, 122 Ames Building, Court Street, Boston, Mass.—Walter H. Sutliff, 802 Columbia Building, Cleveland, Ohio.—Charles W. Swift, 213–217 L. Street, S. W., Washington, D.C.—Frediric Tappan, 435 Carroll Street, Vancouver, B.C.—Prof. J. H. Walton, Jr., University of Wisconsin, Madison, Wis.—W. W. Wells, 380 7th Street, Brooklyn, N.Y.

1900.

INGERSOLL BOWDITCH. RICHARD WASTCOAT.
GEORGE C. GIBBS. PERCY R. ZIEGLER.
N. J. NEALL, *Sec.*, 12 Pearl Street, Boston, Mass.

The time has come when every graduate of Technology must put aside his customary indifference to matters connected with the Institute and work with all his might to help it establish itself in its new location (as soon as that has been decided upon). If the different classes are to be of the greatest assistance, it will be necessary to have more class interest than most members of our class have shown, in order that Technology may obtain what it deserves. To show how much interest is taken in the work of the class committee by men outside of Boston, only five members out of twenty-five to whom letters were sent, responded. The list was chosen in such a way that if all had answered, news would have been published from widely different parts of the United States about men in many different kinds of business. The committee is glad that there are a few men who consider Technology and our class worth while, and it wishes to thank them for the encouragement which has been received.—At the last class dinner, January 23d, the following men were present: Bowditch, Neall, Reardon, Burns, Ashley, Bugbee, Emery, Richardson, Russell, Wentworth, Howe, Burnham, Wedlock, Learnard and Tucker. After the dinner Brown and Ziegler came in to hear Mr. Litchfield explain the reasons why Technology was asking the state for a grant of $100,000. Burns, who is a member of the House of Representatives, from Salem, told the fellows what they wanted to do in order to persuade the legislature to vote for this grant. At the hearing before the committee on education, Bowditch and Ziegler were present to represent the class, and it must have been their influence that persuaded the committee to report

in favor of the bill.—Arthur Constantine of the Boston *Herald*, was present at the dinner given for M. Baklanoff, of the Boston Opera House, on Tuesday, March 7th. From the account which he wrote in the *Herald*, the dinner must have been a great success. Why doesn't Constantine come round to the class dinners and write an account of them for the TECHNOLOGY REVIEW?—Reimer (I.) has finally become on friendly terms with the post-office authorities at East Orange, N.J. Some time ago, at least two letters were sent to him which the government evidently refused to deliver, as he never answered them, but now he has answered two inside of two weeks, which shows that he must have received them. I wonder if Reimer is still collecting pennies for the missionaries in China?—W. C. Dean (VI.) writes that he is building, at Norfolk, Va., a 32-foot cabin cruiser, which will accommodate four grown-ups and two children. He gives the class an invitation to sail with him any time after next June. Chalmers (X.) had the pleasure of seeing him for a few minutes while he was on a trip to Washington. Dean advises those having business in Washington to take a trip to Norfolk and Old Point Comfort, where he will be glad to entertain them.—Seaver (I.) seems to have the same opinion of Tech men in Pittsburgh as the class committee: they do not have time or perhaps inclination to do anything with each other. He is the chief engineer of the Harbison-Walker Refractories Company, and is called in consultation with a great many engineering and technical troubles which have absolutely no relation to fire brick, magnesia brick, chrome brick or silica brick which his company manufactures, and in a good many instances has been able to be of use. This firm gets out books on technical subjects, the one on "Open Hearth Steel" requiring an added edition of 6,000 copies and 4,000 additional copies were printed on "Blast Furnaces." He has just written an article in the *Iron Trade Review* on "Open Hearth Practice." He is thinking of writing his next article in poetry, a sample of which he sent in his letter. Those who were at Cherryfield remember Seaver as the star pitcher of the summer school team, of which Bowditch was the catcher.—D. E. Maxfield (II.) extends a cordial invitation to call on him, to any member of the class who may be in his vicinity. The D'Olier Engineering Company has become the Lathbury D'Olier Company and he has moved with it to the Morris Building, 1421 Chestnut Street, Philadelphia. This company has over $400,000 in government contracts.—Karl Burroughs, of Rumford, Me., very kindly subscribed $5 to the class fund. He is evidently very busy, as he gave no news about himself.—In a letter to Neall, George H. Mead (II.), Chillicothe, O., stated that he has been able to keep out of jail as well as matrimony. If he thinks the latter is as bad as the former, let him ask Dick Wastcoat. He has been pretty heavily involved in work, but hopes to come to New England in the spring.—Robert

S. Blair (VI.) is a member of the law firm of Duell, Warfield & Duell, 2 Rector Street, New York. He went to the Patent Office in the spring of 1901 and studied law during the next three years. For the past seven years he has had pretty steady work. He sees Fulton very often, Hall occasionally, and Hopkins once in a while. They are all being very successful in engineering work. He finds it hard to get out of a rut, but is glad to know that the Boston men are seeing a little of each other.—William P. Rand is very modest and does not think of anything he has done that will interest the class. He does not know how easily the class is interested. As he has not seen any 1900 men for a year, perhaps he may be excused this time.—S. M. Hall (VI.) has been eight years with the Garwood Electric Company, New York, and enjoys the work, as the engineering problems which he has to solve are not at all monotonous. He has twin girls two years old and a boy of six. He sees R. M. Hopkins frequently, and once in a while runs across Fulton and Blair. Ellis (V.) lives near him at Montclair, N.J.—F. D. Warren has been very busy lately, and has been unable to join the class at the informal dinners. Judging by the amount of work he is doing, he is to be excused. His firm, Warren & Gerrish, in the last season has designed and caused to be erected a warehouse in Charlestown and in New Bedford, a factory in Charlestown and in Cambridge, a garage in Annisquam, and a power plant in Spencer.—Carleton Ellis is the inventor of the class, and sends the following notice about himself:

Carleton Ellis has been made a charter member of the Inventors' Guild, an association organized last summer for the purpose of endeavoring to secure greater recognition and better patent protection for the inventors of the country. Several bills have been before Congress lately having to do with the establishment of a Patent Court of Appeals, revision of the practice in the Patent Office relating to procedure in interferences and the like, and along this line the Inventors' Guild proposes to work to secure full acknowledgment and protection for the rights of inventors. The Guild is limited in its membership and includes such representative inventors as Peter Cooper Hewitt, T. S. C. Lowe, James Gayley, Thomas A. Edison, Dr. L. H. Baekeland and Prof. M. I. Pupin.

—Whoever writes the class letters can always rely on Jim Batcheller for news about himself, and this news is always interesting. Lots of others could write just as well as Jim if they were only as public spirited. He is working with Leach, who is vice-president and general manager of the Britannia Mining & Smelting Co., Limited, and during the latter's absence Jim is as "busy as a dog with two tails to wag." On his way from Boston he stopped at Houghton, Mich., and studied copper mines and the treating of the ore. From there he went to Ishpeming and visited a lot of big iron mines; thence to the Memominee District and spent a month in close detailed study of the Chapin Mine, one of the oldest and yet one of the biggest iron mines of that section. He had an offer to go to Korea, but declined, much

to his delight, and went to visit relatives in Lake Itasca District. In September he went to Britannia Beach to help Leach, who had broken down from over work, but has now recovered, thanks to Jim's efficient help.—Wentworth furnishes the information that Bill Stone was recently in town, and of course had to see the triplets. Wentworth's oldest boy was scared of Bill because he thought he was a giant.—Sears was in town about a month ago and seemed satisfied with his work in Mexico.—Some of the fellows received quite a shock the other day when they received the announcement of Dick Wastcoat's marriage to Miss Clara Louise Prescott, on Wednesday, February 15th. They will be at home in Taunton after June 1st. The class committee hope that Dick won't forget that he is needed at the meetings, although Ziegler and Bowditch, being married, know how hard it will be for him to leave home. Gauss writes as follows from Salt Lake City:

I have been all over this western country: British Columbia, Washington, Oregon, Idaho, Montana, Arizona and Utah, so that I have become a pretty fair practical miner. At present I am trying to get back to something that will permit of a white collar. This past year I spent at Ray, Ariz., but left there on the 13th of December. Until you have spent a year away from the sight of a street car, you cannot appreciate the joy there is in riding upon them once more. That soon passes, however, and you want to go faster and as a natural result begin on joy rides. However, I immigrated from Phoenix before my roll had quite evaporated.

Most of the 1900 men I have heard about have made good. I understand little Arthur Constantine is a big gun in telephone circles. Gibbs is being made good literally. Whatever happened to Graff? I suppose Draper has a large family by this time. Did you know that Cates, the superintendent at Ray, was a 1902 Tech man?

—Leigh S. Keith is with McMeen and Miller, Chicago. He hopes some time in the future to send on a lot of news. He is too busy to do it now.—L. L. Cayvan has promised to subscribe to the Technology Review in order to keep in touch with the class news. All this is due to the untiring efforts of Neall. He is superintendent of a baking plant in Grand Rapids, Mich., and can make any baked goods in any climate or altitude. He has a very fine collection of stringed instruments, such as violins, viola, cello, bass, etc. "Some of our young chemical students will find many subjects relating to flour, fats and yeasts worthy of serious investigation. The business is still a rule-of-thumb bunch of facts and not well systematized."—The reason why Tech men have little class spirit compared to graduates of other institutions is that they are working too hard and do not realize it until it is too late. A very good example of this is Morton Mott-Smith. He is practically doing the work of two men and perhaps more. He is teaching physics at Waterville to sixty men and forty girls from the backwoods of Maine, besides putting forty-five men through a laboratory course with insufficient

apparatus and assistance, besides a course in thermo-dynamics and astronomy. This is a pretty big job for one man to undertake.

In the last REVIEW the death of Rondel Lewis was mentioned. He entered the class in 1896 and sustained an excellent record in the special department of chemistry. He served with the Metcalf Drug Company, Carter Ink Company, and was chemist for the Metropolitan Water Board during the preparation of the great reservoir system near Clinton, Mass. He died on June 23, 1910, after a few days' sickness, from meningitis. He left a wife and two little sons to mourn him.

The following changes of addresses have been received: James E. Barker, 1627 Reid Street, Los Angeles, Cal.—Charles C. Briggs, Hotel Boris, Woodburn, Ore.—Ethel F. Brooks, 25 Overlook Terrace, Yonkers, N.Y.—M. E. Brooks, Kettle Valley Lines, Midway Bl, Canada.—F. D. Buffum, care of Col. O'Toole & Assoc., Scottdale, Pa.—L. L. Cayvan, 317 Madison Avenue, Grand Rapids, Mich.—Walter N. Charles, 364 Waltham Street, West Newton, Mass.—Percival Clow, 872 East Thirty-fifth Street, Brooklyn, N.Y.—G. W. Cutting, Jr., School Street, Weston, Mass.—W. A. Dorey, 412 Hudson Avenue, Newark, O.—C. F. Gauss, Box 1422, Ray, Ariz.—L. W. Godfrey, Mozart, Bucks County, Pa.—Dr. Milton W. Hall, Murray Hospital, Butte, Mont.—Arthur L. Hamilton, 661 West Lake Street, Chicago, Ill.—Cyrus H. Hapgood, 171 Kenyon Street, Hartford, Conn.—Dean Hinman, 1125 West Third Street, Red Wing, Minn.—Herman R. Hunt, Kittery, Me.—Daniel S. Johnson, P. O. Box 992, Goldfield, Nev.—Walter R. Kattelle, Treasury Department, Washington, D.C.—William A. Kingman, Arch Street, South Framingham, Mass.—George W. Knight, 641 Washington Street, New York, N.Y.—Lewis M. Lawrence, 122 Ames Building, Boston, Mass.—Francis C. Lincoln, care of Ricketts & Banks, 104 John Street, New York, N.Y.—Francis H. McCrudden, Rockefeller Institute, Sixty-sixth Street and Avenue A, New York, N.Y.—Sumner M. Manley, 3616 Jefferson Street, Kansas City, Mo.—George H. Mead, Mead Pulp & Paper Co., Dayton, Ohio.—George B. Moody, 1328 Washington Street, Bath, Me.—M. C. Mott-Smith, 13 Bartlett Street, Waterville, Me.—Thomas D. Perry, City Hall, Grand Rapids, Mich.—William P. Rand, 487 West 135th Street, New York, N.Y.—Louis A. Sohier, care of Traction Company, Everett, Wash. Willard W. Stone, R.F.D. 3, Newburgh, N.Y.—Charles H. Stratton, New Post Office, Danville, Ill.—Harry M. Thayer, Port Ivory Factories, Proctor & Gamble Mfg. Co., Staten Island N.Y.—Arthur B. White, care of Bixby & White, 502 Mason Building, Los Angeles, Cal.

It is with great regret that the Class Committee has to announce the deaths of Paul R. Brooks and Harrison E. Ashley. Brooks

served on the Class Committee while he was in Peabody, Mass. and rendered great assistance in the plans for the reunion, and in putting the machinery of the class in working order. He had a great future before him and took a great deal of interest in his new work in Texas. The cause of his death is not known to the committee, but it is feared that he died of fever. He died in Chicago.

1901.

ROBERT L. WILLIAMS, *Sec.*, 154 Magazine Street, Cambridge, Mass.

Replies to the letter sent out by the secretary for news for our First Decennial Record Book are coming in slowly, about one hundred having been received at the present writing. If this book is to be a success it is necessary that those who have not written do so at once. While a blank form was mailed for the convenience of the class, a brief account of each man's experience since leaving Tech, in his own words, would make the book more interesting reading in that it would have a personal touch.

So wake up, fellows, and get busy unless you want your name to appear in the list of deceased and unheard from. —*The Examiner*, San José, December 17, has the marriage notice of Francis Kernan Baxter, Jr., head of the department of mining of the Associated Oil Company of Utica, N.Y., to Miss Helen Emelia Haas. Their honeymoon was spent in Southern California.—Ellis F. Lawrence writes in reply to the secretary's letter, "Enclosed please find photographs of three little 'Naughty Ones.' Their names and ages are on the back. I shall watch for the Record Book with interest to find if any one can show three better ones." They are certainly a fine lot of kids and the class will have to hustle to beat them.—A. K. Trenholme is located in Portland, Ore., and has charge of a department of the Manual Training Works in the public schools.—A. P. Merrill is doing well in Tacoma, where his firm, Potter and Merrill have the contract for a "Skyscraper," the new Commercial Club building.—Frederick G. Clapp continues to spend his time examining and reporting on oil and gas properties for various large companies. For the past year most of his time has been spent in Ohio, where important fields are being developed. Clapp is the originator of the term "Geological Engineer" and has a large consulting practice. He maintains offices at 331 Fourth Avenue, Pittsburg, Pa.—P. A. Potter is with Nicholas S. Hill, Jr., Consulting Hydraulic Engineer, New York City. His specialty is water supply investigation and water works construction.—George A. Cowing is treasurer of the Harkness & Cowing Co., Cincinnati, O.

Chester N. Chubb is superintendent of the Sioux Falls Gas Company.—F. Ward Coburn has delivered a lecture before the Engineer's Club of Sparrows Point, Md., on the "Bessemer Process."—W. J. Sayward since leaving Tech has traveled through England, France, Switzerland and Italy. He is the junior member of the firm Willcox & Sayward, Architects, Seattle, Wash.—Harry E. Dart with the firm of Buck & Sheldon, civil engineers, Hartford, Conn., is in charge of their mechanical and electrical work.

The following changes in addresses have been received recently:—G. C. Peterson, Duxbury, Mass. —Prof. J. A. Ross, Jr., Lafayette College, Easton, Pa.—Prof. A. N. Rowe, 295 Commonwealth Avenue, Boston.—E. P. Burdich, 808 Firemen's Building, Newark, N.J.—H. T. Chandler, 20 Blue Hill Avenue, Mattapan, Mass.—F. S. Clapp, 331 Fourth Avenue, Pittsburg, Pa.—F. N. Emerson, 321 Main Street, Peoria, Ill.—George T. Hyde, 157 St. James Street, Montreal, Canada.—D. A. Kohr, 130 Oxford Avenue, Dayton, Ohio.—Robert W. Bailey, 503 8th Avenue, Brooklyn, N.Y.—F. K. Baxter, Jr., 1839 Hayes Street, San Francisco, Cal.—E. P. Beckwith, Garrison, N.Y.—R. H. Brown, 21 West 127th Street, New York, N.Y. —Charles W. Cade, 35 Norfolk Road, Arlington, Mass.—A. B. Campau, 450 Houseman Building, Grand Rapids, Mich.—C. F. F. Campbell, 5733 Forbes Street, Pittsburg, Pa.—G. W. Carter, 110 State Street, Boston, Mass.—F. W. Coburn, Toledo Furnace Co., Toledo, Ohio—R. E. Dow, General Chemical Company of California, Martinez, Cal.—Mansfield Estabrook, 141 Milk Street, Boston, Mass.—L. S. Florsheim, 729 Milwaukee Avenue, Chicago, Ill.—H. S. Folsom, 324 E. Market St., Los Angeles, Cal.—M. I. Giel, 290 West Street, Flatbush, Brooklyn, N.Y.—G. E. Gustafson, 3748 Maple Square Avenue, Chicago, Ill.—A. W. Higgins, Chesapeake & Ohio Coal & Coke Co., Grand Rapids, Mich.—T. F. Louge, 443 East 138th Street, New York, N.Y.—E. F. Lawrence, 1021 Chamber of Commerce building, Portland, Ore.—H. P. Macdonald, Snead & Co., Iron Works, Pine Street, Jersey Street, N.J.—Miss Grace Macleod, Pratt Institute, Brooklyn, N.Y.—F. I. Merrick, 341 Sixth Avenue, Pittsburg, Pa.—H. C. Morris, 112 West 72d Street, New York, N.Y.—D. L. Ordway, 1428 Ridgewood Avenue, Lakewood, Ohio.—H. P. Parrock, 575 Old Colony Building, Chicago, Ill.—Langdon Pearse, 5529 Cornell Avenue, Chicago, Ill.—J. M. Perkins, 498 Helen Avenue, Detroit, Mich.—A. C. Persons, 5 Lincoln Avenue, Willimantic, Conn.—A. W. Peters, 53 Lincoln Street, Boston, Mass.—E. J. Proulx, Box 190, Glenside, Pa.—F. W. Puckey, 5207 Washington Avenue, Chicago, Ill.—A. J. Taylor, 1900 Van Buren, Wilmington, Del.—A. K. Trenholm, 1914 E. Washington Street, Portland, Ore.—H. R. White, 189 Amherst Street, E. Orange, N.J.—W. S. Wildes, State Hall, Albany, N.Y.—C. F. Willard, 127 Grout Street,

Camden, N.J.—S. L. Wonson, 307 Title Guaranty Building, St. Louis, Mo.

Mr. Langdon Pearse, assistant engineer for the Sanitary District of Chicago, gave an illustrated lecture on March 11 at the Detroit Museum of Art on "Modern Ideas as to the Desirability of Pure Water, in Connection with Water Supply and Sewage Disposal." Mr. Pearse made particular reference to conditions in various typical lake cities.

1902.

F. H. Hunter, *Sec.*, 75 Park Street, West Roxbury, Mass.

Since the last issue of The Review went to press the class has had its annual bowling party. This was held on Monday, January 23, at the Adams Square alleys, in Boston, and was preceded by an informal dinner at the Rathskellar. The numbers were less than previous years, but in spite of this a jolly good time was enjoyed by those on hand. The record for the class was never endangered during the evening, Austin Wood coming the highest on the average. Sherman was high man for a single string. If Hall had but kept more of his balls on the alley he might have done most anything, for his execution, at times, was deadly.—At the alumni banquet at the Somerset in January there was a good turnout of '02 men: Fisher, Patch, Vaughan, Finneran, Robinson, Reynolds, Pendergast, Fitch, J. W. Smith and Hunter. —At the annual dinner of the Technology Club of New York on January 21 the classmates on hand were Annett D. R. Franklin, Grant Taylor and Wemyss.—Since the last issue of The Review the class reports for the year have gone out and have brought in many responses, both in the shape of dues and of letters. There are many yet to be heard from and if this line serves as a reminder that *you* have not answered, the chance to set your conscience at ease is still open—at the usual rates.—Pendergast is in the main office of Stone & Webster helping them design power stations.—Walker is with the White Investing Company, Sears Building, Boston. Since his marriage he has been living in Winthrop.—Jimmy Smith has moved into a new house on Olive Road, Lexington, the plans for which were drawn by Roger Greeley.—Eames is in the mechanical laboratory at the Institute.—Edwards has established an office as a chemist in the Railway Exchange Building, Portland, Ore. He is making a specialty of cement testing.—Charles Boardman (not C. H., Jr.) is with Sprague, Keyes & Jackson, electrical engineers, 88 Broad Street, Boston.—Large increases in the cradle roll of the class have been reported.—From Tacoma we hear of John Wiltshire Morse who arrived there on June 11, 1910.—Mary Merrill Franklin was born at Melrose, Mass., on December 18.—Mathesius reports the birth of a second daughter in February of this year.—George

Eagar writes of two children since the last record book was issued. George Darby Eagar is three years old and Geraldine is one. This makes four for Eagar, which gives him a seat in the front row of "Our Proud and Happy Fathers."—Clifford B. Clapp reports from Hanover, N.H., where he is now located in the Dartmouth College library, the arrival of a son, Richard Gardner Clapp, upon March 3.—Fitzgerald reports from Albany, N.Y., the birth of a daughter on November 9, last. Fitzgerald was transferred from Boston to Albany about a year ago by the Boston & Albany Railroad, but is still in the Signal Department. His house address is 406 Clinton Avenue, Albany.—Desloge reports a son, Firmin, now fifteen months old. The young man, so his father states, is already entered for Tech in the class of '32.—Vaughan's address is 72 West Street, Worcester, Mass.—Cummins writes from Redding, Cal., that he is going abroad this spring to examine a mining property on the southern coast of Wales.—Steever's address is care Congdon & Steever, 51 Board of Trade, Chicago. He was married last July, in Denver.—May is manager of the General Bakelite Company, 100 William Street, New York. He has sent the secretary a pamphlet about Bakelite, which will be turned over to any Course X. man applying for it. It is too deep for a Course IV. man.—L. E. Williams is in the Cleveland office of the Great Lakes Dredge & Docks Co., 1630 Williamson Building.—Paul Weeks has opened an office as a consulting engineer in Los Angeles, Cal. His address is 217 Mariposa Avenue and his residence is Needles, Cal.—McBurney is with A. W. Buel, 15 William Street, New York, as a consulting engineer. His residence is 38 East 31st Street, New York. Previous to taking this position McBurney was for two years Assistant Engineer in the bridge department of the New York, New Haven & Hartford Railroad, at New Haven, Conn.—John B. Turner is a contracting engineer at 533 Pierce Building, St. Louis, Mo.—Ewart is city engineer of Aberdeen, Wash.—Gardner Rogers reports from Houghton, Mich, that he finds the climate there in winter as vigorous as it is delightful in summer. He has an average snowfall of seventeen feet to dispose of in keeping the Houghton County Traction Company moving. He says that everybody uses snow shoes and that his older boy, now three, is quite an expert in this line.—Eagar is in the industrial control department of the General Electric Company at Schenectady. He still keeps up his military interest and is Second Duty Sergeant of Company E, Second Regiment, New York National Guard. He was recently stage manager for the eleventh annual performance of the "Jest and Song Club."—Fruit reports that since the burning of the Milwaukee plant of the American Bridge Company, last year, he has been attached to the contracting department. He has spent the winter in New Orleans and can be reached there in care of the American Bridge Company, 1030 Maison Blanche.—We

hear that Pond is at 2A Calle Barcelona 24, Mexico City. Like the other classmates in Mexico he seems to be too busy at present to write.—In the recent concentration of forces toward the Mexican border, Captain Wadleigh left the Boston Navy Yard in charge of a detachment of marines. We understand that he was moved to Guantanamo, Cuba.—Matthies, is now doing engineering work for the European department of the Western Electric Company. His headquarters are, care Bell Telephone Company, 18 Rue Bonderwyns, Antwerp, Belgium.—The Underwriters Bureau of New England has moved to 141 Milk Street, Boston. This makes a new address for Robinson and Jimmy Smith.—The following addresses have reached the secretary and though not verified by him are doubtless correct: Grant, Pittsburg Flood Commission, 1804 Arrott Building, Pittsburg, Pa.—Randall, First National Bank Building, Houston, Texas.—Wright, United States Bureau of Mines, 40th and Butler Streets, Pittsburg, Pa.—Swan, care W. H. McElwain Company, 348 Congress Street, Boston. —Seabury, 135 South Broadway, White Plains, N.Y.—Archie Gardner, Estacada, Ore.—Lawson, Pearless Dwellings, Wilkinsburg, Pa.—A. T. Nelson, Henry Building, Seattle, Wash., care Trussed Concrete Steel Co.—Redfield, 332 South 13th Street, Philadelphia, Pa.—Warren C. Taylor, Union College, Schenectady, N.Y.

The engagement is announced of Dr. William J. Mixter to Miss Dorothy Fay, daughter of Mr. and Mrs. Henry H. Fay of Boston. Doctor Mixter is the son of Dr. and Mrs. Charles J. Mixter of Boston, and after his graduation from Technology he attended the Harvard Medical School from which he was graduated in 1906. He is a member of the Tennis and Racquet and the St. Botolph Clubs.

1903.

F. A. Olmsted, *Sec.*, Oregon City, Ore.
R. H. Nutter, *Asst. Sec.*, Lynn, Mass.

The class was represented at the dinner of the Alumni Association January 4, by Swett, Gleason, Eustis, Stiles, Bartlett, Clark, Gould, Fischer and Denham.—On January 28 a very enjoyable class dinner was held at the Tech Union. The class was fortunate in having for its guest that evening Professor Jaggar, who gave a most interesting talk, illustrated by lantern slides, on volcanoes and a Volcanic Experiment Station to be established at Hawaii by the Massachusetts Institute of Technology. The dinner was attended by the following men: Atwood, Aldrich, Gilker, Capelle, Haddock, Comer, Avery, Loughlin, Swett, Ricker, King, Clark, Nutter, Eustis, Sears, Jackson and Merrill.—The following new addresses have been sent in: C. H. Porter is now with

W. H. McElwain Company, 348 Congress Street, Boston; residence, 407 Riverbank Court, Cambridge.—H. H. Fales is with the American Felt Company, 246 Summer Street, Boston.—L. W. Adams' address is South Bethlehem, Pa., care of Bethlehem Steel Company.—G. M. Harris as secretary and treasurer of the Worumbo Company (handling woolen fabrics) may now be found at 334 Fourth Avenue, New York.—P. R. Parker is with The Yuba Construction Company, 1224 Alaska Building, Seattle, Wash.—Newman is at Riverside, Cal., as construction superintendent of the Riverside Portland Cement Company.—R. F. Manahan is at Minas Tecolotes y Anexas, Santa Barbara, Chih, Mex.—E. H. Millard has charge of the erection of a 3,000,000-cubic-foot gas holder at St. Paul, Minn., for the Riter-Conley Manufacturing Company.—H. Crosby writes from New York as follows:

On February 16 we had an informal class dinner at the Technology Club, the first we have had since Morse was with us in September. From the small attendance it would seem that nearly all the fifty '03 men in New York and vicinity were married and had become "stay-at-homes." Bryan, Crosby, MacDonald, Scofield and Scudder were present. MacDonald came all the way from Bridgeport to attend. What we lacked in numbers we made up in enthusiasm. After a good dinner, well served, we adjourned to the pool table and kept the room merry with laughter all the evening. In attendance to our '03 dinners Course XIII. has easily taken first place, over 50 per cent. of the men at each meeting being members of that course. If all goes well I shall sail for Panama with the American Society of Civil Engineers on March 2. There is a possibility that I may extend this trip to take in Mexico City, Oaxaca and other points of interest to the south of us.

—W. H. Adams writes from Tientsin, China:

I am still at the same place and enjoying my work here very much. My contract is up next July, but I have been asked to renew it on an increased salary. I expect to be here for another three years, but may be home in the summer of 1913, although it will be too late for the ten-year reunion. I have installed an electric lighting plant, testing laboratory, heating system and the pumps and distribution system for our water plant. Now I have entire charge of all those in addition to my regular teaching work. Last summer Mrs. Adams and myself spent six weeks in the interior of Korea, visiting Mukden and the Great Wall of China on the way. We traveled over scenes of the Russo-Japanese War, except Port Arthur, which we hope to visit next summer. I hope to get to Manila to look up Hayden some time, but my vacation comes the wrong time of the year for such a trip.

—Riddell writes from East Helena, Mont.:

There is little to add in my case to the account in the '03 Book, except that in June of last year Philip Mosman, Tech '87, was transferred to the New York office of the American Sugar & Refining Co., and I fell heir to his position as superintendent of the East Helena plant.

From R. W. Eaton it was learned that F. B. Crosby was injured at Hoosac Tunnel the latter part of February. While working on

the electrification of the tunnel he was struck by a work train. The latest report indicates that he is getting on finely. Crosby writes as follows from his home at Woodsville, N.H.: "I had a very close call indeed, but was very fortunate both in the relatively slight injuries received and in my rapid recovery. The principal damage was a bad fracture of the right leg between knee and ankle. The doctor allowed me to be removed from the hospital to my home in New Hampshire, but I am writing in bed and will probably be tied up pretty closely for another five or six weeks. Eventually, I have every assurance of coming out all right."— The engagement is announced of Miss Frances Gilmore Greene of Lynn, Mass., to R. H. Nutter.

1904.

EVERETT O. HILLER, *Sec.*, care of Pneumatic Scale Corporation, Ltd., Norfolk Downs, Mass.
ADDISON F. HOLMES, *Asst. Sec.*, Mass. Inst. of Tech., Boston, Mass.

On the evening of January 31, a class dinner was held at the Boston City Club. Interference with other functions such as the dinner of the Engineers Club of Boston prevented an attendance as large as was expected. The dinner was chiefly given over to discussion of plans for what is now our annual outing in June. Stevens and Haley contributed numerous characteristic stories of experiences in handling electrical linemen who seem to be industrial gypsies, with as little stability as the roving bands which we still find throughout the country. It was the sense of this meeting and seems to be generally agreed that we should put special emphasis on this June outing, making it the banner event of the year and one to which men even considerable distance away may come feeling that a special effort is warranted by the good time to be had. A letter from Haynes is here quoted, he having taken up the plans for the June event as chairman of the committee:

In response to your letter of sometime ago, I would say that the committee in charge of the outing (composed of Mert Emerson and Tammy Rockwood and I) has gotten together and decided that some country club near Boston will be a good place to go and that, all things considered, the best time would be June 23–25. The plan thus far is to have a little dinner together in Boston Friday evening the 23d and take a train after it for the club, where we would have all day Saturday and up to the middle of the afternoon Sunday. There will be ample provision made for all kinds of sports on both days, and the expense will not be heavy, a ten dollar bill should cover it easily without stretching. The committee earnestly hopes that those who were prevented from participating in last year's good time owing to a conflict of engagements around the 17th of June, will be able to come this year as this is a week later. We feel pretty sure that those who came last year will be on hand again, and in some way we have got to impress it on the rest of the bunch around eastern Massachusetts that this is an affair that they cannot afford to miss.

—There will be a great gathering of '04 men at the smoker and banquet April 10 and 11. Indications are that the number coming back will crowd the figures of the 1909 reunion—Throughout the winter a consistent canvass of the class has been made by Holmes in order to bring the finances of the class to their proper state. Each man has been asked to bring his dues up to date, with very gratifying results. With the loyal financial response has come a general show of interest and class loyalty. Many men, particularly among those far away from Boston, have fixed their minds on attending the next five year reunion, showing that our ten-year anniversary is something to anticipate even now.—The interests of the Sullivan Machinery Company in the Northwest have been put in charge of Austin Y. Hoy, '04, with headquarters in the Hutton Building, Spokane, Wash. The position is one of considerable responsibility as the territory includes not only the northwestern states but the western Canadian provinces.—Don Galusha writes:

I am going to leave for Minneapolis within a day or two and shall be gone for the larger part of the year. Their power station burned up awhile back and we are elected to get it going again, or rather a new one, by the first of next October. There are a few substations and some underground work so there will be little time for fishing.

—We have a report of a very pleasant social function in Newton with Phil Sweetser as principal actor together with his fiancée, Miss Helen Pratt. The event was a tin shower in anticipation of a future domestic establishment, though Phil has not yet told us when he is going to do the trick.—In a letter Stevens says: "The following from the Sunday *Globe* of January 1, 1911, is the most important item of interest concerning myself which I know of: 'Mr. and Mrs. Frank H. Rice of Allston announce the engagement of their daughter, Marion Dana Rice, to Henry Warren Stevens, M. I. T., '04, son of Mr. and Mrs. Stevens of Gardner, Mass.' "—Charlie Barrett held forth at the Boston Automobile show. He is with the Knox Automobile Company, Springfield, Mass. He had the automobile bug as a student, and has never been cured. His better half was with him and everything seemed to be coming his way.—The following letter from F. K. Merriman, Course I., is in reply to a direct appeal reminding him that one's own personal experiences often seem too unimportant to be told, while as a matter of fact they hold much interest for others who have not had the same opportunities of seeing life in various places. It is the kind of letter that helps make the class news column instructive and interesting along general as well as personal lines. The secretary believes that others of the class will follow Merriman's lead.

I have your recent letter. The reason I haven't written before is, as you stated, constant association with things in other countries has made them appear uninteresting and at times a bore. The panic of '97 hit me just as we finished a fine piece of work in Florida, a job that was a real pleasure to work on. I didn't see much ahead in the state and the wanderlust struck me so I tied up with J. G. White & Co., Inc., of New York and was sent to the Philippines,—went out over the Canadian Pacific to Vancouver. This in itself was an interesting trip. Sailed from Vancouver August 22, 1907, in *Yokohama*. Did this port and took a trip up to Tokio while waiting for steamer to discharge cargo. Laid over a week, or ten days, at Kole and took in considerable around there. The trip through the Inland Sea of Japan was superb on a moonlight night and it looked exceptionally good to me, as at that time I was "courting" the present Mrs. Merriman. In fact I was pretty busy those days. At Nagasaki one has an opportunity of studying one of the greatest sights in the world from a labor point of view. I refer to the coaling of the ships by the native men, women, and children. The lighters or barges of coal are swung alongside as soon as the anchor is dropped, scaffolding of bamboo is erected in a very short time, the older people and children put the coal in small baskets; girls and women stand on the scaffolding which is erected in sort of ladder. The coal, in the small baskets, is passed up from one to another until it is finally thrown out of the basket into the large coal storage bins where it is packed away by the more able-bodied men. The emply baskets are thrown down onto the barge by a boy who stands at the top of the ladder. The upward movement of the baskets resembles a coal conveyor. The women are the machine. If one drops a basket one does not have time to pick it up again. That would delay every one below the one who dropped the basket and there are always more baskets "a coming." The best part of it all is the good nature of the laborers. All are smiling, laughing, or talking. These people can put more coal in a steamer than any machine, and are excelled only by the natives at Port Said who handle the coal in a different manner. We had a day at Shanghai which is a modern cosmopolitan city. At Hong Kong, the British stronghold of the Orient, one comes in contact with the representatives of a nation which understands governing the dark tribes, and which thoroughly understands how to live and enjoy life in the tropics. Those of you who anticipate I am going to say Americans are to be sadly disappointed. Americans do not live in the tropics. They exist. They have not learned through long years of experience that the New York hustle can not be carried on successfully year after year in the tropics. The Britisher has. If any one does not believe this let him look upon the sturdy Britons at Hong Kong. Their short working hours, football, cricket, polo, tennis, etc., signify that a white man can live in the tropics provided he lives right. Fortunately, I did not encounter a typhoon between Hong Kong and Manila. The China Sea is noted for them and as I have been in the tail end of two or three I have no desire to see one closer. My stay in Manila was short. It is an up-to-date city and the headquarters of the government. I first went to Chi and was there eight months. The company built sixty miles of railroad on Chi Island. Three feet, six inch gage, everything being first class, reinforced concrete culverts, bridge abutments and piers, steel spans, in fact everything of a permanent nature. All the station buildings and shops were of reinforced concrete construction. The railroad ties were of hardwood and the spike holes were bored before ties left the terminal yard.

From Chi I was transferred to Iloilo, Panay Island, and filled various positions from assistant engineer to engineer of bridges and chief draftsman. The work on the island was similar to that on Chi, although the rainy season and an insufficient labor market hindered the work to some extent. I enjoyed the work on this island although during the latter part of it I was rather "all in" due to the continued heat. The climate in Uncle Sam's possessions in the Far East is very good, considering they are in the tropics. The nights were always cool, that is, temperature about 80° F. The one redeeming feature is the good breeze from either the southwest—rainy season—or northeast,—dry season. When the monsoon is changing from one to the other then it is rather trying. The rainy season varies in different islands The natives in the Visayan district are peaceable but it is a question in my mind as to whether or not they will ever reach a real state of civilization, become industrious

and capable of self-government. I believe I am inclined to be an Englishman in this respect, and "wait and see." I should advise those who anticipate going to the islands, to first read a book by Stanley Portal Hyatt entitled "The Little Brown Brother," and think twice. When one has been through two epidemics of cholera, in danger of smallpox and leprosy constantly then one realizes the good old United States is God's country. There are some fine positions in the government service in the islands, and there are many where one is practically confined to sun-dried fish and rice for food. Chon, it is called over there. I don't know as I am any worse off for the experience, but that is no reason why others should jump at the chance to go. I sometimes wish I had done as Stetson did. Get in one job and stick there. I have knocked all the way around and willing to settle down. We left about the middle of January and came home via Europe stopping at Singapore, Penauy, Columbo, Bombay, Aden, Port Said, Marseilles, then through France, and England. While at Frankfort I purchased a set of Otto Richter's drafting instruments that I could not duplicate in the States for five times what I paid for them. Have been trying the teaching profession since last fall and found myself rather rusty on theory. However, I like the work very well.

—From Bixby we have the following short word:

It is hard to realize that some of the fellows have so little chance to meet the old associates. Was very glad to see Arthur Bee and family the other day. First '04 man I have seen in five years.

—Lee Phillips writes from Johnstown, Pa.

Regarding myself there is nothing of particular interest. I am Pittsburg salesman for the National Radiator Company, besides covering most of the surrounding territory for seventy miles. I am married and have a couple of little daughters. Occasionally—whenever there is one, I attend any Tech Smoker that the men hold in this neck of the woods. One '04 I can always count on seeing is A. D. Smith, who is running an independent oil refinery at Coroapolis. He has a nice wife and couple of fine boys. F. M. Pierce I also see occasionally. He is a draughtsman with the Pennsylvania Bridge Company at Beaver Falls. He is also a married man with a son. Several times in the last few years I have run across Woods, who is down in Steubenville, Ohio, with the La Belle Iron Works.

—It has just come to the secretary's notice that last fall W. N. Todd was married to Mary Helen Bird at Belfast, Me. They are living at 222 Eastern Promenade, Portland, Me. Congratulations are offered none the less sincere for being tardy.—Harrison A. Whitney writes from Portland, Ore. He remarks that class news seems to have been scarce in the REVIEW and immediately continues "I don't believe I have written for several years." It is all right Whitney if all were interested to make such a criticism and follow with a letter as you did the cause would be removed. He continues:—"We have a little girl two years old. Am doing well in a business way being a junior member of the firm of Whidden & Lewis, both old Tech men by the way. I am a member of the Commercial and Arlington Clubs and have just received notice of my election as associate member of the American Society of Civil Engineers. There is a large number of Tech men here and

we have a dinner now and then and talk over old times. Have not been East since coming out here in '04, but am going to be at next reunion if possible."—Carl King writes from 418 Main Street, East Haven, Conn., telling of a husky son and a new arrival, a girl, and assuring us that there is nothing that will take their places. He states that though he likes it there he hopes to be able to return to Boston when he has amassed his little pile.—The following from Herman R. Simmons rings true and is the kind of spirit we hope to see develop in '04. "We have been so rushed with the additions to the mills (Lorraine Manufacturing Company, Pawtucket, R.I.), that outside interests have been neglected. Sometime I trust that I may be able to take more active part in the class affairs."—Concerning class business, we have a letter from E. R. Adams. He is superintendent of the Velardena Unit, American Smelter Company, Velardena, Durango, Mexico.—We have sad news from Fred Farrell, who is with the Emerson Laboratory, Springfield, Mass. His letter herewith tells the story best:

After three years of great suffering and pain my brother, Frank S., died at Brookfield, Mass., on Friday last, February 24. He was married on Wednesday, the 22d, to Helen Louis Wales of Stoughton, Mass., to whom he had been engaged for a number of years. She is a brave, wonderful girl and full worthy to enter among the sisters of our class. My brother was cheerful and happy to the last and had many messages and tokens of his love for many he knew. During his illness he read and mastered by the aid of a wonderfully retentive memory over a thousand volumes of history and biography, particularly along lines of political history and with special reference to American history. My brother was listed, I believe, as an '05 man but he belongs in '04 as we both went to the Institute together; he, however, received his degree in '05 as he finished his thesis in the summer of 1904."

—The secretary has written to Mrs. Farrell and to Fred offering the sincerest sympathy of the class and remarking on the esteem in which we have always held the one who has left them so early in life.—The following changes in mail addresses of '04 men have been noted: Edwin F. Allbright, care of Adams-Pond Company, Boston, Mass.—P.M. Arnold, 90 West Street, New York, N.Y.—James M. F. Baker, care of Cram Goodhue & Ferguson, 170 Fifth Avenue, New York, N.Y.—Calvin P. Bascom, 3737 Delmar Boulevard, St. Louis, Mo.—Albert W. Bee, Jr., 6629 Wentworth Avenue, Chicago, Ill.—William L. Bently, P.O. Box 801, Dallas, Tex.—Frederic A. Biggi, New York State Highway Commission, Division Engineer's Office, Albany, N.Y.—Bernard Blum, Union Depot, Duluth, Minn.—Stephen L. Bradley, Sandwich, Mass.—George W. Briggs, 88 Winthrop Street, Taunton, Mass.—Moses Brown, Jr., care of American Sugar and Refining Co., Santa Eulalia, Chihuahua, Mex.—C. C. Carhart, P.O. Box 411, Gooding, Idaho.—Francis J. Carty, 322 South Station, Boston, Mass.—L.C. Clark, Jr., 264 Green Street, Cambridge, Mass.—Harry H. Cerf, care of Y. M. C. A., Duluth, Minn.—E. L. Clifford, 1720 Railway

Exchange, Chicago, Ill.—B. H. Clingerman, care of Mobile Electric Company, Mobile, Ala.—George A. Curtis, Massachusetts Highway Commission, 34 Boylston Street, Pittsfield, Mass.—Arthur C. Downes, care of National Carbon Company, Fostoria, Ohio.—Clifton C. Easterbrook, 85 Whitney Place, Buffalo, N.Y.—Robert Faulkner, 326 North 10th Street, Lebanon, Pa.—Assistant Naval Constructor William B. Ferguson, Jr., Navy Yard, Boston, Mass.—Halsey French, 165 Broadway, Room 725, New York, N.Y.—George R. Gaenslem, 403 St. Anthony Avenue, San Antonio, Texas.—J. A. Haraden, 115 Glenwood Boulevard, Schenectady, N.Y.—George B. Harrington, care of Seattle Electric Company, Seattle, Wash.—R. Hazeltine, Wheeling Corrugating Company, Wheeling, W. Va.—Andrew H. Hephern, 8 Park Drive, Brookline, Mass.—William E. Hodge, Lo Pospect Terrace, Springfield, Mass.—Prof. Elmer A. Holbrook, Nova Scotia Technical College, Halifax, Nova Scotia.—Frederick W. Horton, care of United States Bureau of Mines, Pittsburg, Pa.—Cyrus P. Howes, Missouri Pacific Railway Company, care of Bridge Engineer, St. Louis, Mo.—Austin Y. Hoy, 717 Hutton Block, Spokane, Wash.—Charles W. Hoy, New Jersey Gas Company, Glassboro, N.J.—Alfred H. Jacobs, 110 Sutter Street, San Francisco, Cal.—George K. Kaiser, 76 Park Avenue, East Orange, N.J.—William H. Koppelman, Cornettsville, Ky.—Waldemar R. Kremer, Filter Manufacturing Company, Milwaukee, Wis.—Currier Lang, The Solvay Process Company, Detroit, Mich.—J. Lawrence Lyon, 320 High Street, Pawtucket, R.I.—M. G. Magnuson, 1766 Girard Avenue, South Minneapolis, Minn.—M. Edgar Mason, 1030 North Branch Street, Chicago, Ill.—Ambrose M. Merrill, 340 77th Street, Brooklyn, N.Y.—E. Harris Metcalf, Center Sandwich, N.H.—Robert M. Morse, 17 Battery Place, New York, N.Y.—Clarence A. Neal, 903 Sharp Building, Kansas City, Mo.—Rolf R. Newman, 607 Park View Avenue, Los Angeles, Cal.—Frederic Nickerson, Crocker Building, San Francisco, Cal.—Eliot W. Niles, Maplewood, N.J.—H. F. Noyes, Princess Furnace Company, Glen Wilton, Va.—R. B. Pendergast, 48 Beacon Street, Boston, Mass.—Rowland G. Rice, 192 Summer Street, Stamford, Conn.—Prof. H. K. Richardson, Pennsylvania State College, State College, Pa.—John R. Sanborn, Artistic Metal Construction Company, Jamestown, N.Y.—Waldron P. Schumacher, Minas Tecolotes Y. Anexas, Santa Barbara, Chihuahua, Mex.—Melvin H. Schwartz, 50 N. Sacramento Boulevard, Chicago, Ill.—Edgar F. Smith, 165 Broadway, Room 725, New York, N.Y.—David Sutton, 81 Bushnell Street, Dorchester, Mass.—Grant S. Taylor, 117 Remsen Street, Brooklyn, N.Y.—R. E. Lee Taylor, 633 Law Building, Norfolk, Va.—Herman E. Thompson, Box 506, Manchester, N.H.—O. G. Thurlow, Tennnesee Coal, Iron & Railroad Company, Birmingham, Ala.—Fremont N. Turgeon, Witherbee Sherman & Co., Mineville, N.Y.—Reginald A. Wentworth, 4

Walnut Street, Southbridge, Mass.—Ralph B. Williams, care of Miami Copper Company, P.O. Box 100, Miami, Ariz.—Emery J. Wilson, 10917 Ashbury Avenue, N.E., Cleveland, Ohio.—Lewis G. Wilson, Department of Buildings, City Hall, Kansas City, Mo. —Wilbur Wilson, 520 W. 122d Street, New York, N.Y.

1905.

GROSVENOR D.W. MARCY, *Sec.* 246 Summer Street, Boston, Mass.

Roy Allen writes from Parral, Mexico:

Nothing happens here but work, and that is not of interest to the outsider. When subjects for conversation fail, we talk about the revolution. Last week Velardena, where Gene Burton is, and the smelter where we send part of our ore, were raided by the "rebels" and a forced collection taken of horses, arms, ammunition and money. No indignities were offered the Americans, though some of them were *cordially* (?) invited to help the "cause." Since the raid, bridges have been burned this side of the smelter, cutting the people there off from communication with the outside world, and leaving us with the prospect of a (at the present) valueless pile of ore on hand.

We have had no direct communication with El Paso for three weeks. Revolutionists are actively engaged within less than fifty miles both north and west of us. They have been the cause of sending a considerable number of wounded soldiers to Parral within the last few days, and to-day brought the news of some very successful holdups of ranchers and storekeepers directly to the north of us.

The trouble seems to be spreading, and the government is having a harder job than it anticipated. We have not been troubled, but we do dislike being shut off from home news for a week at a time. Besides, we are interested to learn how the campaign for $100,000 a year for Tech comes out.

—Victor Paquet wrote from Bath, Me., on December 17: "A seven and a half pound son arrived this morning, and has been named Victor Hugo Paquet, Jr. Both mother and boy are doing well." —Harry Wentworth announces the birth of Nathan Henry Wentworth, on January 5, weighing nine and a half pounds.—The secretary has a similar announcement to make. Richard Carter Marcy was born on January 15, and expects to be M. I. T. about '33.—E. L. Hill, for the past few years assistant district engineer of the American Steel & Wire Co., has recently been appointed assistant superintendent of that company's electrical cable works in Worcester.—C. R. Adams had an article in the *Engineering News* for February 2, on "Stream Gauging During the Frozen Season; an Outline of the Difficulties, and a Description of Three Methods Applicable to Different Conditions." The article was reviewed at some length in the *Engineering Magazine* for March.—Bob Lord is convalescing after an attack of pneumonia, and early in March went to the Bermudas with Phil Hinkley.—'05 men have been turning out in good style at the informal lunches held by the "Last Ten Classes" at the American House Rathskeller, on each Friday at 12.30, and except

on two occasions have led the other classes in point of numbers. Men in town on Fridays should remember this, for they will surely find someone they know there.—Roger Stebbins writes from Liberty, N.Y., February 20, as follows:

I have just received word of the death of our classmate Russell B. Simons, which occurred on February 7 at his home in Greenfield, and thought that possibly you might not have heard of it. He entered the Institute with '04, but lost a year through sickness, and took his degree with '05, Course XIII. He has been sick with tuberculosis for a couple of years, having left work at the Fore River Shipbuilding Company, in June, 1909, to go to Saranac, N.Y. I have heard from him from time to time since then, and although he never said much about his condition, I gathered that he had only slight hope of recovery. I have had a year's experience now with the same disease, but am happy to say that I am well on the road to recovery, and expect to return to work this spring. Simons' mother's name is Mrs. Henry N. Simons, 12 High Street, Greenfield, Mass. Give my regards to any of the fellows you may meet, and tell them that I expect to see them again before long.

—The secretary also had a note from C. E. Smart, who lives in Greenfield, regarding Simons, and saw several newspaper items about his death, all speaking of the esteem in which he was held in his home town, at the Institute, in his work, and finally at Saranac, where his cheerfulness despite his condition, won him many friends. The newspaper clipping following is all the information the secretary has yet received concerning the death of another of our classmates:

Springfield, Mass., February 25.—The death of Frank S. Farrell, a graduate of the Massachusetts Institute of Technology, and practical chemist of wide reputation in Brookfield, reveals an unusual romance, as his marriage became known simultaneously. For six years Mr. Farrell has suffered from an incurable disease of the spine. In full knowledge that Mr. Farrell was very low, Miss Louise Wales of Stoughton became his bride on Wednesday, the 22d.

1906.

RALPH R. PATCH, *Sec.*, 15 Lincoln Street, Stoneham, Mass.

Terrell Bartlett, of Bartlett & Ranney, San Antonio, Tex., was married on November 3, 1910, to Miss Elizabeth Cassin of San Antonio. Willis G. Waldo came up from Brownsville to assist Ranney in seeing Bartlett safely across the line. A delightful reception at the home of the bride followed the ceremony. Mr. and Mrs. Bartlett will reside for the present in San Antonio.

Another successful 1906 informal dinner transpired on March 11th. There were present during the festivities: Keleher, Banash, Blackwell, Littig, Donovan, Howard, Kendall, Hemphill, Hinckley, and a friend of Keleher's, Mr. Martins, of Rio Grande del Sur, Brazil, a civil engineer. During the dinner Mr. Martins favored the gathering with a brilliant address (in Portuguese)

which was rather freely interpreted by Keleher. The speaker was elected an honorary member of the class of 1906. There were other speakers of the evening—especially brother Donovan—but the readers of THE REVIEW are spared. The inevitable pool game wound up the festivities.

The following item from the *Boston Transcript* will be of interest to the class: "James M. Buchanan of Trenton, the youngest son of the state librarian, Henry C. Buchanan of New Jersey, and Miss Kate Williams of New Bedford will be married Saturday evening in that Massachusetts city. Mr. Buchanan is a graduate of Princeton University and the Massachusetts Institute of Technology. He is an electrical engineer connected with the New York & New Jersey Telephone Company.

Notices for a 1906 dinner were sent to the 135 men living within 50 miles of Boston. The responses did not reflect remarkable enthusiasm. Considerable supplementary telephoning resulted in a return of 69 replies, nine of these said "Yes," sixty said "No," Six men forgot to sign their cards. On Friday evening February 10, ten loyal '06 men gathered at Louis' Café and we surely spent a pleasant evening. Course VI. made a great showing, claiming 70 per cent. of the attendance, namely Batchelder, Clark, Karson, Kidder, Sherman, Wetterer. The others present, Hobson (1.), Kerr (VII.), and Patch (XI.). It wasn't family cares that made the small attendance as the married men were there in force. The menu was tempting, though Kidder claimed he had eaten better sparrows. Wetterer reported for the committee on five-year book that if 250 books were issued and the secretary did considerable work the cost could be held at about $1.00 per copy. The opinion was that the book should not be started until we had on deposit checks from enough men to guarantee the success of the book as they believed the class as a whole does not care for this book now. A suggestion was made that the 1906 men get together somewhere in the woods for two or three days at the time of June festivities but no action was taken. The program then developed into a contest of high class story telling. In this, the laurel was voted to Hobson, with Sherman and Wetterer close seconds. No changes of addresses nor notes of interest have been received from individuals since the last REVIEW so we conclude that everybody is very busy, where they were then.

1907.

BRYANT NICHOLS, *Sec.*, 143 Garland Street, Everett, Mass.
W. W. BIGELOW, *Res. Sec.*, 274 Lexington Street, Waltham, Mass.

Charles E. Baker was married at Newton Highlands, Mass., on May 6, 1910.—Carl Brewer of Ironwood, Mich., is engaged to Miss Mabel Willcox Mason of Gladstone, Mich., and expects

be married during the summer.—Ralph Crosby has been a father for some time; Evelyn Fanny Crosby was born on May 8, 1910. Crosby is living in Wakefield, Mass., now.—L. A. Dickinson is engaged to Miss Judith A. Erikson of Boston.—E. W. James was married March 4, 1907, and has a daughter born in Manila, P.I., on December 31, 1907.—G. R. Jones was married on November 24, 1910.—A. G. Labbé was married on November 30, 1910, to Miss Loomis of Tacoma, Wash.—September 20, 1910, George D. Luther was married to Miss Charlena Freeman of Amherst, N.S., at Denver, Col.—February 11 the Boston bunch of '07 men held a small dinner at the Technology Club. Only thirteen men were present, including our honorary member, Bursar Rand. Bigelow, Crosby, Dickinson, Kimball, Macomber, Mahar, Moody, Norton, E. P. Noyes, Taylor, Wells and Wonson were the other twelve. Wonson gave a talk on shoe manufacturing from a Tech man's point of view, and explained why so many of the '07 boys were attracted to it, all of which was very interesting. Then Norton explained the life and experiences that Uncle Sam offers to his officers in the Coast Artillery Corps. Then the Bursar spoke on the Institute's plans for the future.—Sam Marx is making a name for himself in architecture. He won a competition for a $250,000 art museum for New Orleans, and is building four large residences, two apartment houses, two factories and has other contracts. —William D. Milne was married on October 1, 1910, to Miss Lorna W. McLean of Connecticut.—Bryant Nichols, has in training a member of the class of 1932, M. I. T. He has a son, Bartlett Fogg Nichols, born January 27, 1911.—S. E. Rockwell was married on January 25, 1911, to Miss Bertha M. Schoenherr, at Ashmont, Mass.—O. H. Starkweather is now in Needham, Mass. He has two children, one born in June, 1908, and the other on November 1, 1910.—H. A. Sullwold is in the same class. He was married November 16, 1908. His first child, Gretchen, was born August 7, 1909, and on February 14, 1911, a boy, John, arrived at his home.—E. S. Wires was married on June 22, 1909. He has one child, born April 2, 1910, by name Barbara Mead Wires.—R. G. Woodbridge is engaged to Miss Ethel Lytle Chandler of Newton Center, Mass.

I.

On the Part of the Secretaries

It is with extreme regret that we announce the death on January 16th of Warren Stearns Baker, '08, at Saranac Lake, N.Y. He was forced to leave the Institute after his second year on account of failing health, which he never fully regained, his death resulting from tuberculosis. He was an associate member of the Alumni Association and was always very much interested in class affairs, but seldom appeared at class gatherings on account of his condition.

The results from the circular letters sent out in January have been quite gratifying, both as to the number of replies and the consequent fund of information about members of the class, and as to the payment of the class dues. About 120 of the fellows have sent in their "Reply Sheets," and dues have accompanied them in nearly every case. Several of these responses have been from men who have not been heard from for two or three years, and the secretaries were particularly glad to hear from them, and to pass along their greetings and experiences through the medium of the following pages. But what about the remaining 200 odd to whom letters were sent at the same time? You, reader, if you have an '07 "Reply Sheet" tucked away in some corner of your desk, *dig* it *out* now while you read, then *fill* it *out*, enclose the $1.00, and *send* it *out* to the home of the secretary. The news and the letters in the following pages have been gleaned for the most part from these replies. The secretaries feel that whatever hard work and often monotonous effort they put into the preparation and mailing of these letters is amply rewarded when they can publish a bunch of class notes like this. In the July number last year, a list of "Married Men and Class Babies" appeared in the '07 notes. In the July number coming, a similar list will appear, for there have been so many additions to both items of this heading that the old list is ancient history. If your name belongs in such a tabulation, be sure that the secretary has the facts in the case by June 10. To close our brief message, don't forget that June is near at hand, and with it comes Technology reunion and celebration. Plan your business if possible so that you can be in Boston on June 6, which is graduation day, and which brings '07 reunion and Tech night at the "Pops." If you can tell the secretary the addresses of any of the following, please write to him: F. O. Adams, J. B. Harlow, O. W. Potter, F. T. Moses.

II.

Miscellaneous Notes About '07 Men all Over the World

P. L. Adams is still working for the Public Service Railway Company. He has just completed five month's work in the Marion power station which supplies practically all the power for railways and lighting in northern New Jersey. He is located in the shops and finds the work interesting. His address is still 88 Sherman Avenue, Newark, N.J.—Charlie Allen is in the upper leather end of the shoe business in Spencer, Mass. "Interesting, good variety, plenty of chance for originality, worth while, long hours, fairly hard work, I like it." Thus he describes it, and says he has gained ten pounds since September 10, 1910 (his wedding day).—Jim Alvey is resident engineer for the Arnold Company of Chicago on the construction of the Evansville, Indiana, plant of the Bucyrus

Vulcan Steam Shovel Company.—Henry Alvord writes from Brunswick, Me., where he is instructor in the department of surveying and drawing, saying there is little new, but that there is a nice bunch of fellows there, and he is enjoying life.—F. W. Amadon is assistant engineer with the New York, New Haven & Hartford Railroad, and for the past year has been making estimates on the costs of car-barns, working up ground plans, and supervising the construction of barns in some of the larger cities in Connecticut. Some of these barns contain over a mile of track under cover, and accommodate 115 45-foot electric cars.—Charles E. Baker, Jr., is superintendent on outside work for the Eastern Dredging Company of Boston. He has had charge of a ledge removal job in the Penobscot River for the last two years and expects to be there another year. He is in the Boston office during December, January and February.—Jim Barker is in the architect's office of the Canadian Pacific Railroad at Montreal. He is designing steel and reënforced concrete for hotel and station structures.—John G. Barry is in Jacala, Hidalgo, Mex., as engineer, doing considerable geological work, with the Cortez Associated Mines. He is "in the heart of Mexico, with a fine climate, at an elevation of 4,000 feet, with native companions of Otomene Indians. Principal avocation is trying to think in Spanish, and make a native understand the value of precise measurements."—C. W. Beam is in the Maintenance of Way Department with the New York Central & Hudson River Company at Watertown, N.Y.—Walter Bigelow is still with J. R. Worcester Company at Waltham, Mass. He and Gilbert Small attended a meeting of the American Society of Civil Engineers in New York in January. While there, on a trip to the Bethlehem Steel Company, they met Mr. and Mrs. R. W. Parlin, both '07, also H. P. Farrington, '07.—C. R. Bragdon is in charge of the laboratory of the Glidden Varnish Company of Cleveland, Ohio, and is trying to find some way to improve "Japa-lac." He says he is planning to come to the 1912 reunion. We recommend this course to all '07-ites. Be on hand at our wooden reunion, and plan for it now.—Carl Brewer is mining engineer for the Cleveland-Cliffs Iron Company, Ironwood, Mich.—L. W. Brock is connected with the Pneuvac Company, Boston, promoting and selling vacuum cleaners.—Harry Burhans is secretary of the Burhans & Black Co., hardware dealers, and has charge of the mill and factory supply end of the business. Harry is secretary-treasurer of the M. I. T. Club of Central New York, consisting of men in Rome, Utica, Oneida, Auburn and Syracuse.—A. L. Burwell is a chemist with George Dudley & Son Co., of Winsted, Conn. This concern runs a tannery for sheepskins, hemlock bark and alum being the chief tannages. Burwell is installing a new tannage which produces a pure white leather which resembles chamois in its properties, and is marketed for glove purposes. Burwell unfortunately was laid up in

the hospital for five weeks, owing to an explosion of a so-called "non-inflammable" degreasing liquid. His entire head and hands were badly burned, but his eyes were not injured. He had a visit from Fred Moses, '07, Course V., while in the hospital.—A. H. Cenedella, Broadhead, New York.—Chaffee is still teaching some and doing research work in the Jefferson Physical Laboratory at Harvard College. His "most charming duty is teaching a course of physics at Radcliffe."—Howard Chase is with J. H. Tower Iron Works at Providence, R.I., designing and estimating steel and iron work for all kinds of structures.—Kenneth Chipman is still with the Geological Survey at Ottawa, Canada. He spent eight months of 1910 in British Columbia and four in the office at Ottawa. He mapped 900 square miles at two miles to the inch during that time.—A. O. Christensen continues to live in Sombrerete, Zoc, Mex. He is superintendent of a silver mine there, which is 400 years old, but still making good. He has charge of everything underground, and enjoys the work. His boss is 100 miles away and seldoms turns up.—W. B. Coffin is draughtsman with R. Clipston Sturgis, and has done considerable superintending as well as draughting, 40 Oakland Road, Brookline, Mass., is his address.—H. B. Conover is at Atlantic Highlands, N.Y.—Sam Coupal now has the nice easy address of Apt. 16, Tehuantepec, Oaxaca, Mex. He is with the United Mining & Exploration Company, now operating the Santa Lucia Mine at Santa Marganta. Sam is manager of the outfit, having his headquarters at Tehuantepec, and spending about two weeks out of four at the mine, which is three days' hard horseback riding from the railroad. Sam says:—"This town (Tehuantepec) very conservatively boasts of having the prettiest woman in the Republic. It is a trifle hot here, but is sure a coming country. I have just started in here, and have hopes for a big future. Expect to return East for a visit in about a year."—E. R. Cowen, 4419 Racine Avenue, Chicago, Ill.—George A. Crane is now with Thompson-Starret Company, 502 Worcester Building, Portland, Ore.—Ralph Crosby is back East again, living in Wakefield, Mass., and working for Stone & Webster, "drawing power-houses,—and wages."—Paul Cumings is living at the Technology Chambers, Boston, and is working for James Purdon, architect, just as he has been doing since June, 1907.—L. D. Davenport has been with the Oliver Iron Mining Company, Chisholm, Minn., ever since the summer of 1906, working in the engineering department all the time except for six months last summer, when he worked underground as shift-boss. During the past year he has done considerable work for a professor of mining at the University of Minnesota, who is writing a book on mining in that part of the country.—F. A. Dempwolf has just returned from two years and a half of study and travel abroad, and is now practising architecture in York, Pa. —C. R. Denmark is a very necessary man in Washington, D.C.

He is engineer in charge of the power plant for the museum buildings and the Smithsonian Institute there, and also has charge of the heating, ventilating, lighting and plumbing in these buildings. —L. A. Dickinson is now with the Automobile Club of America in New York. His chief work now consists in making route-maps and making up tours for members of the club. His address is 317 West 56th Street, New York.—V. H. Dickson is with the Powers Regulator Company, 40 Dearborn Street, Chicago, Ill. This concern makes and installs apparatus for controlling temperatures to one degree Fahrenheit, for every purpose where accurate results are desired.—Clif Draper continues his work with the Department of Agriculture, Office of Public Roads, in Washington. He is investigating various bituminous road materials and their application to the movement for good roads.— K. W. Dyer is secretary-treasurer and purchasing agent for the Frisbie Motor Company, Incorporated, Middletown, Conn. This concern manufactures gas engines for marine and stationary work. Their engines "are used all over this country, British Columbia and Alaska, and are making good. Have been on the market several years. Four cycle 3 to 75 H.P., 1 to 6 cylinders.—"Chick" Eaton is lieutenant, U. S. A., stationed at Fort Wadsworth, New York.—M. H. Eisenhart is assistant superintendent of the chemical plant at Eastman Kodak Company, Rochester, N.Y. Most of the heavy chemicals used in the works are made in his department. His address is 508 Oxford Street, Rochester, N.Y.— E. C. Evans, 277 Princeton Street, East Boston, Mass.—O. G. Fales has been engineer in charge of the construction of the new plant of the Gregg Company Limited, at Lodi, N.J., during 1910. His address is care of The Gregg Company, Ltd., Hackensack, N.J.— Paul Frederick, care of Cia Docos de Santos, Santos, Brazil.— Roy F. Gale is with the Midvale Steel Company, Philadelphia, Pa. He is responsible for the steam end of the power used at the plant. On February 25, he sailed for a two months' trip through Italy, France, Germany and England.—J. M. Gaylord, 605 Federal Building, Los Angeles, Cal.—J. E. Garratt is working with the city engineer of Waltham, Mass., for the City Board of Survey. He is making suggestions and surveys for new streets and changes and additions to old streets.—W. A. Gates is structural engineer and superintendent for a concern of architects, 701 Majestic Building, Oklahoma City, Okla.—W. I. Griffin's address is 13 West Street, Utica, N.Y.—Albert E. Greene is an electric furnace expert and also engineer for the American Electric Smelting and Engineering Company, 1251 Monadnock Block, Chicago, Ill. This company "is prepared to undertake the solution of commercial problems of electric and chemical or electro-metallurgical nature, and their specialty is the construction, installation, and operation of electric furnace plants for refining steel, reducing iron, copper and lead ores, and also for pure heating purposes." As mentioned

in the March REVIEW, Albert is to contribute a paper on his specialty at the Congress of Technology.—A. E. Hartwell is with the Hartwell Iron Works, Houston, Texas. They do general foundry, machine and structural business. Pastoriza, '07, spent the Christmas holidays with Hartwell.—Hud Hastings is acquiring information as rapidly as possible regarding the steel business from his work with Joseph T. Ryerson & Son, Chicago. His address is 4559 Woodlawn Avenue, Chicago, Ill.—Warren Hastings is assistant mine and open pit foreman with the New Jersey Zinc Company, Franklin Furnace, N.J.—J. P. Hinckley is a salesman for the L. E. Knott Apparatus Company of Boston. Their line is supplies for physics, chemistry, biology and physiography work in schools and colleges and business houses.—Walter Hoover is with Hammond Boynton Paint Company of Boston, selling their various lines of protective paints.—C. M. Hutchins is superintendent of the Rockland, Mass., factory of Rice & Hutchins, manufacturers of men's shoes. The output at this one factory of the seven operated by the concern is 3,000 pairs daily.—E. W. James, of Tech show fame, describes himself as "highway engineer in the field; advising, consulting, and constructing, with regard to road materials, county highway systems, maintenance organization, administration, etc.; construction of 'Object Lesson Roads,' expert reports of county systems a specialty." His business card says: "U. S. Highway Engineer, Office of Public Roads, Washington, D. C." A letter from him from Mobile, Ala., reads thus:

Just four years ago this month, almost this very day, I left Tech for the Philippines. Since then I haven't seen a Tech man with whom I was personally acquainted. Last night my good friend, the city editor of the *Mobile Register*, called me up on the 'phone, and said he had tickets for "Madam Sherry." We went; and the program thoughtfully informed me that the stage manager was James Francis, who staged the Tech shows so long. Of course we got together during the first possible intermission, and exchanged the cordial "mitt." Jim isn't a *bona fide* Tech man, but he was one of the play bunch, and the first familiar Tech face I had seen in many moons. I certainly was glad to see him. Seeing him, however, served to emphasize the isolation (Tech-nically speaking) in which I have lived since 1907. I've blessed the REVIEW that has come every now and then with news of the class, and I've kept in touch with the Alumni Association, but nothing more. Ten thousand miles, the tropics, and the mana spirit, have made life at Tech seem so far away as to be almost beyond recall. And here it all comes back on the "Madame Sherry" program, while old Ben Thomas is pumping me about Mobile County road building. Yes, I'm back from the Islands—brought back fifteen trunks and chests of far-eastern plunder—and glad to be in the temterate zone once more. I've covered some distance since quitting Tech. In fact, I'm the long distance trotter of '07, I expect. Since February, 1907, I've made a trip around the world and through Europe, covering about 30,000 miles. Since getting busy on my return, I have covered about 9,800 miles to date, and am still going some. Just now, I am trying to show Mobile County, Alabama, how to get her money's worth in good roads out of a half-million dollar bond issue. I saw John Caton in the Philippines—we were on the same station for a while, and Draper is in the laboratory of "my Washington office," and Jim Francis goes over to Pensacola with "Madame Sherry" tonight.

P.S. I don't write rag-time verse any more. My wife won't let me.

Grandville R. Jones is assistant superintendent of the filtration plant at Washington, D.C. They have twenty-nine acres of filtering area and filter about sixty million gallons per day.—Harold Kingsbury is third assistant examiner in the United States Patent Office, with another man, handling the class of photography. They pass upon the operativeness and patentability of all inventions having to do with photography. Kingsbury's particular line is films, plates and color photography. He graduated from the National University Law School in June, 1910, with the degree of L.L. B. He is at present studying at George Washington University for the degree of Master of Patent Law. Both schools provide evening courses, which were the ones he took, doing his studying after returning from recitations at 8.30 p. m. He was admitted to the District of Columbia Bar in February, 1911.—R. F. Knight, 215 Bassett Street, New Britain, Conn.—Our old friend, Kolatschevsky, writes from 35 Rue Coquilhat, Antwerp, Belgium. He is with the Bell Telephone Manufacturing Company, which is a western electric house, and is headquarters for branch houses in London, Paris, Berlin, Vienna, and Rome. He has taken the apprentice course, and has also been assisting in the laboratory for some months. He is now in Brussels doing installing work. He says that Europe is almost undeveloped, "telephonically speaking."—A. G. Labbé is assistant manager for the Willamette Iron & Steel Works at Portland, Ore. They manufacture hoisting machinery, logging enginees and steel ships, employing 400 men.—E. G. Lee is with Sawyer & Moulton, Portland, Me. He has been doing mostly cost-keeping work connected with the Ayiscohos dam which his concern is building for storage purposes in the head-waters in the Androscoggin River. He has been laid up for seven weeks during January and February with an attack of scarlet fever, but is back at work again now.—E. F. Lewis, 148 Holden Street, Providence, R.I.—H. D. Loring is living at 4601 Columbia Avenue, Madisonville, Ohio. He is with the Ferro Concrete Construction Company of Cincinnati, doing estimating and designing work, along with a little outside work hustling for contracts. E. C. Noyes, '07, is with the same concern, and Loring says they recently had an '07 reunion at Noyes' home in Hartwell, Ohio. These two fellows claim a record for rapid-fire chess—three games an hour.—B. P. Luce, 723 Magazine Street, New Orleans, La.—W. S. Lucey is now doing mechanical engineering work with the Canadian Kodak Company, Toronto, Canada. His address is 54 Murray Street, Toronto.—George Luther is managing the Denver office of the Electric Storage Battery Company, whose home office is in Philadelphia. Their chief line is supplying batteries to automobiles. This Denver office was opened last June, and business has been very good. Luther says he recently met Jack Donaldson, '07, Course III., who is secretary-treasurer of the Denver Fire Clay Company.—H. J. C. Mac-

Donald is superintendent of the Hidden Creek Copper Mine, Goose Bay, via Prince Rupert, B.C.—Milton E. MacGregor is teaching mathematics and mechanical drawing at the Pawtucket High School, and is looking after the athletics there.—As mentioned in the March REVIEW, Sam Marx is making good with a vengeance in his architectural work. He lives at Chicago Beach Hotel with John Frank.—H. H. McChesney, 1511 East Genesee Street, Syracuse, N.Y.—John McMillin is engaging in high finance with the firm of Henry L. Doherty & Co., 60 Wall Street, New York. Stuart Miller says he received a gold-brick circular from John a short time ago. The secretary got one, too. John is as smooth as ever, it seems.—H. C. McRae is assistant division engineer of the Disposal Division of the Baltimore Sewerage Commission. They are constructing a disposal plant that will treat 75,000,000 gallons per day.—Nat Middleton is president of the Whiting-Middleton Construction Company of Baltimore. They are contractors and designers for bridges, sewers, dams, and foundations.—Stuart Miller is now residing at 3366 Morrison Avenue-Clifton, Cincinnati, Ohio. He is traveling salesman in the wholesale paper business in western Ohio and eastern Indiana, his firm being the Whitaker Paper Company. "Stu" asks the secretary to give his best regards to all the class, and suggests that he would be mighty glad to receive some letters from the fellows. (Probably there are many more who feel the same way. Let's all take a few minutes now and then and write to some of our old friends of 1907.)—W. D. Milne can be reached by addressing a letter to Box 22, Newberry, South Carolina, where he is representing Lockwood Greene & Co., in their construction of a 20,000 spindle cotton mill.—Harry Moody is selling steam turbines, condensers, gas engines, etc., for the Westinghouse Machine Company. His home is at 5 Walker Street, West Somerville, Mass.—J. G. Moore, Piedmont Traction Company, Charlotte, North Carolinas.—G. A. Murfey is living in Altadena, Cal.—Since the first of February, 1911, Floyd Naramore has been with Emil Schecht & Son, architects, Portland, Ore. He has charge of the structural design of their work.—J. S. Nicholl, 144 Columbia Heights, Brooklyn, N.Y.—George Norton is still enjoying the hard work of being first lieutenant in the U. S. A. He says it is not much like Freshman drill, so he likes it. He is stationed now at Fort Andrews, Mass.—"Tucky" Noyes is inspector of general construction work at the Boston Navy Yard at Charlestown, Mass.—George Otis is in the sales end of the business with American Blue Stone Company of New York City.—"Pack" (Emerson H.) is in the research department of the Eastman Kodak Company at Rochester, N.Y., and is living at 297 Alexander Street in the same city. He says there are nine Tech men with the company now, the latest arrival of whom is Russ, '07, the chemical "shark."—Hugh Pastoriza is electrical man for the Telluride Power Com-

pany, Provo, Utah. The company has about 500 miles of 45,000 volt transmission line in Utah and Idaho.—O. L. Peabody's address now is 787 Washington Street, Norwood, Mass.—J. R. Randall, of Course II., is with the Powell River Paper Company, Powell River, British Columbia.—Allen Pope is living at 3551 Holmead Place, Washington, D.C.—Arthur Remick is practising architecture with considerable success in New York City. He is living at 44 West 44th Street.—E. C. Richardson, left the American Locomotive Company and went with Allis Chalmers Company on September 1, 1910. He is doing production, bonus system and business management work. His address is 467 Marshall Street, Milwaukee, Wis.—E. M. Richardson is still with the American Locomotive Company at their New York office, 1886 Broadway.—Winslow Robinson is with F. W. Dodge Company of Boston. Mail will reach him if addressed to Box 2953, Boston, Mass. —S. E. Rockwell is now keeping house at 112 Magnolia Street, Dorchester, Mass. "Rocky" is chief draughtsman and assistant engineer for the Ambursen Hydraulic Construction Company of Boston.—Vernon Rood writes from Utah Apex Mining Company, Bingham Canyon, Utah. He says:—"For the past year I have been a shift-boss whose principal duties seem to be keeping the hard-rock miners from sleeping in the stopes and kicking to the superintendent about the other shift. Not so strenuous as catching the last train at Wellesley, and requires no Page & Shaw's. Kinnear was in camp a couple of months last fall, and Pastoriza occasionally drops in to check up the I-R drop on his company's transmission lines."—L. P. Russell is at 15 Copley Terrace, Pittsfield, Mass.—Merton Sage is assistant patent examiner in the Division of Electrochemistry and Metallurgy.—Roswell Sampson is with the Quincy Mining Company, Hancock, Mich.—Fred Schmidt has returned from a year's study and travel in Europe, during which time he was with Dempwolf a good deal, and is located at 26 King Street, Westfield, Mass.—"Becky" Sharp can be found at 81 4th Street, New Bedford, Mass.—F. B. Shields has charge of the factory of the Smithport Extract Company of Boston, Mass., and Damascus, Va.; is also one of the three owners of the business. They have a railroad of their own, and "since the Virginia laws require the election of a vice-president, and there was no one else, this honor (?) fell to him. The road is only sixteen miles long, but is divided into three separate corporations." —T. L. Smith is chief clerk at the Richmond, Va., plant of the American Locomotive Company. They employ from 2,000 to 3,000 men. Smith's address is Gresham Court, Richmond, Va.— Winsor Soule has been doing some superintending and much draughting for his firm (Allen & Collins of Boston), and also several good jobs on the outside. He lives at 1571 Beacon Street, Brookline, Mass.—Ed. Squire is working for the Olds Motor Works, Boston. He is in charge of the repair shop and parts

department, taking care of all shipping to New England branches. Later he expects to go into the selling and managing end. He has his home at 57 Oakwood Road, Newtonville, Mass.—Oscar Starkweather has left his "old Kentucky home" and has come North again to Needham, Mass.—H. A. Sullwold, 1773 Summit Avenue, St. Paul, Minn., is with Reed & Stem of the same city. He is one of their designers, and has build a house on the side, and in February had two more houses and a garage on hand.—A. H. Tashjian is located in the Oxford Building, Portland, Me. He is architectural engineer with John Calvin Stevens, architect. He has designed the largest reinforced concrete factory in Maine, a bridge for the Soldiers' Home in Hampton, Va., and a large power house. He is enjoying his work and looks forward to a successful future.—R. K. Taylor is an inspector for the Boston Transit Commission on the new subway work in Boston regarding excavation and placing of concrete masonry and steel reënforcement.—Bob Thayer has settled in his new home at 463 North Grove Street, East Orange, N.J. He is associate editor of the *Railway Age Gazette*, working simply on the mechanical end of railway work.—Carl Trauerman is a mining engineer with the La Plata Gold Mining Company, Durango, Col. In January he was working on tests for a proposed 500 ton cyanide mill. He was appointed by the director on the mining department of the Colorado State Immigration Bureau to write two articles for publication on the mineral resources of two counties in Colorado. During his spare moments he writes financial articles for several of the papers, for he had a good bit of training at this while on the staff of the *Wall Street Journal*.—J. E. Tresnon is with the Telluride Power Company, Telluride, Col. He writes:

I am the representative of the company to the customers, who are entirely mining companies. This takes me to the different mines and mills in the district, most of which are situated on the mountain tops. I am writing this from the mine of the Barstow Mines Company, which is located near Ironton, Col. The general manager of this mine is C. R. Wilfrey, a former Tech student who took a special mining course with '06. In order to get here from headquarters (Telluride) I had to travel on train to Ouray thence on horseback. I met Wilfrey this morning and we started out in the snow dressed like cowboys. The general attire consisted of a close fitting cap, leather coat, chaparros (those are the leather covers which are drawn up over the pants, and have sometimes leather strings ornamenting them—sometimes are made of bushy skins), and high shoes. We arrived here after a rather hard ride of four hours. The last part of the trip was over a narrow trail which was trodden-down packed snow about a foot wide. If the horse got off the trail he would be straddled across the trodden path with his feet pawing vigorously at soft snow, of which there would be from six to ten feet below him, and his head sticking out from the snow. A little pulling on the reins got him back on the trail again without our losing the horse. If he had got off the trail on the lower side with all four feet, so that he did not straddle the path, we might have lost him. I am hoping to get away from here tomorrow, but they do not think it will be possible because we will be snowed in. We have a lively Tech bunch in the Colorado department of the Power Company. J. C. Damon, '05, has charge of everything pertaining to the engineering work. A. L. Harding, '10, has successfully installed a device to indicate in our power station the height of water in our pressure tank. G. H. Horton, '10, is making estimates on a pipe line.

—F. W. Tupper is in business for himself in Walden, N.Y., contracting for excavation and concrete work.—E. E. Turkington is an electrical inspector of factories and inspector of electrical fittings and devices for the Factory Mutual Fire Insurance Company of Boston.—C. V. Turner is with the Pierce Phosphate Company, Pierce, Fla.—L. T. Walker is at Fort Hamilton, N.Y., second lieutenant, U. S. A.—P. B. Webber is, treasurer and general manager of the Commonwealth Gas & Electric Companies, Athol Gas & Electric Company, Marlboro-Hudson Gas Company, Westboro Gas & Electric Company, and treasurer of the Marlboro Electric Company. His office is 313 Shawmut Bank Building, Boston, Mass.—Lawrence Wetmore, 26 South High Street, New Britain, Conn.—E. F. Whitney, 609 Colman Building, Seattle, Wash.—L. C. Whittemore says:—"For the past six months I have been located here in Cornwall, N.Y., in charge of shaft No. 5 of the Moodna Pressure Tunnel, having been transferred here from the Poughkeepsie office of the Board of Water Supply last July. The work is mostly underground, and is interesting in many particulars, and at times exciting."

1908.

JOHN T. TOBIN, *Sec.*, care of F. F. Harrington, Bridge Engineer, Virginian Railway Company, Norfolk, Va.
RUDOLPH B. WEILER, *Res. Sec.*, 26 Brooks Street, Brighton, Mass.

I. *On the Part of the Resident Secretary.*

At the alumni dinner on January 4 the following '08 men were present: H. R. Calloway, Alexander Ellis, Jr., "Pop" Gerrish, H. P. Gurney, Sherwood Hall, Jr., Orrin S. Lyon, Peter F. McLaughlin, Everett H. Newhall, Channing Turner, Edmund L. Warren, Charles W. Whitmore, Rudolph B. Weiler. This is an increase of one over the number that attended last year, and it is interesting to note that only three of the above attended the dinner a year ago.—The regular bi-monthly dinner was held at the Technology Club, 83 Newbury Street, on January 10. The following were present: R. B. Weiler, who presided, Lawrence H. Allen, Carl H. Bangs, C. L. Batchelder, B. W. Cary, C. W. Clark "Clif" Cochrane, Langdon Coffin, Alton M. Cook, Leslie B. Ellis, W. D. Ford, W. C. Folsom, "Pop" Gerrish, A. W. Heath, W. B. Hunter, H. H. Howland, S. C. Lyon, E. H. Newhall, E. R. Smith, R. B. Todd, F. T. Towle, Charles W. Whitmore and Conrad Youngerman. "Nick" Carter and "Bill" Flaherty were also present, but were unable to remain for the dinner. "Nick" had to go to a dance as usual. The arguments for an increased grant from the state were read and discussed. It was decided to hold the next dinner, which is the annual meeting, at the American

House. It was decided to attend the informal weekly luncheons held at the American House on Fridays, 12.30 to 1.30, by the classes from '01 to '10, instead of trying to hold an independent weekly luncheon of our own. No invitation or notice is necessary in order to attend. "Cliff" Cochrane announced the arrival of an eleven and a half-pound son, Richard Maurice, on September 27, 1910, at Melrose. No engagements or weddings had taken place since the previous meeting, or at least none of those present would admit any. After the meeting the fellows spent the remainder of the evening socially at the club.—The regular bi-monthly dinners were inaugurated at the annual dinner last March, and the one just reported completes the year. The attendance during this period has shown a steady and gratifying increase, as may be seen by the following tabulation: March, 1910 (annual meeting), 25; May, 9; July, 17; September, 19; November, 21; January, 25. On March 1 the resident secretary sent out to every name on the mailing list the third annual letter containing a request for cash and for information. Prompt returns of both are desired, so if you haven't sent in your reply yet please do so at once. Complete returns of the salary canvass will be published in the July REVIEW. Anything for that issue should be received by June 8.—Vonnegut & Bohn, architects, 610 Indiana Trust Building, Indianapolis, Ind., announce that Mr. Kurt Vonnegut, son of the late Bernard Vonnegut, has been admitted to membership in the firm. Congratulations are due Kurt.—A. T. Scannell is president of the Archer Iron Works, Western Avenue and Thirty-Fourth Place, Chicago, Ill. L. A. Clark is secretary-treasurer of the same firm. They both live at 3801 Michigan Avenue.—Our list of unknown addresses is increasing. We will be pleased to receive addresses of the following: M. L. Bodenstein, George R. Cooke, Miss Susie T. Folsom, A. F. Mohan, U. J. Nicholas, Walter L. Pratt, Henry J. Ruggles, Hardy Cross, G. J. Venn, S. Chochian, H. G. Hume.

II. *Matrimonial*

In the July number there will appear a complete list of all those who, up to date, have been reported married, and names of children, if any. Some have reported that they are married to business. A large number have written across the face of the card "Not yet, but soon." Still others have "secret hopes," and some say "nothing doing." Engagements announced: Irving M. Guilford to Miss Emma Makepiece Fitch of Allston, Mass.—Horace S. Sargent to Miss Marie W. Christie of Everett, Mass.—Arthur C. Merrill to Miss Florence L. Masson of Hammondsport, N.Y.—Mathew Porosky was married January 11, 1911, to Miss Harriet Bessie Isaacson.—And here is "Joe" Reid, after hiding

his light under a bushel, announcing his marriage to Miss Nancy Louise Andrus on December 27th, 1910.—Raymond E. Drake was married March 20, 1911, to Miss Blanche Louise Cary of Brockton, Mass.

III. *Letters*

We print the following from A. F. Edge, Cliffside, N.J.:

. . . My present location is in an out-of-the-way place on top of the palisades opposite 110th Street, New York City. The factory is directly beneath on the river's edge, and I, with the other cliff-dwellers, have to climb down and back. I have long since ceased to discuss other means of locomotion. The latest is a high dive down and an aëroplunk back. The plant is the Edgewater plant of the Corn Products Refining Company producing corn starch, glucose, sugar, oil, feed, and oil-cake at the rate of 27,000 bushels of Indian corn per twenty-four hours. I have the supervision and testing connected with the manufacture of thin-boiling starch used in the textile and confectionery trades. My location prevents my taking part in reunions, etc., in Boston, but I attend the Tech Club of New York and see some friends at their meetings.

Ralph T. Regnell writes from The Right of Way Mines, Ltd., Cobalt, Ontario:

. . . I am more than sorry I cannot get down for the class dinner as I haven't been away from here in seventeen months now, but hope to get back to the "Old Town" sometime and see some of the old bunch. I see Heimer once in a while here and have knocked around with Joslin and Loring, '09, quite a lot, but haven't seen them for some time. I would like to be there, and you might say a little prayer for me and the other absent ones if you happen to go to "Chapel."

From 126 Lewis Street, Perth Amboy, N.J., Howard E. Batsford writes:

Three weeks ago our end of this concern [Roessler & Hasslacher Chemical Company], the research department at Niagara Falls, picked up its belongings and boarded a train to be taken under the wings of the parent concern. So you find me now writing from New Jersey instead of New York. Down here I begin to get among Tech fellows who are on the job. We have three plants here besides the research department. In Plant No. 1 Gardner, '08, is assistant superintendent, in Plant No. 2, Sargent of an earlier class is superintendent and in Plant No. 3, Colby Dill, '06, is superintendent. So you can see that Tech is represented in all departments of this company. Of the three men I come in contact most with Gardner who is kept very busy with operating and construction work. The only other '08 man with whom I have been in correspondence lately is C. W. Clark, who is very busy between his plant in Boston and the one in Baltimore. At present I'm hoping that his boat may become grounded or his train stopped close enough for him to make us a visit.

IV. *New Addresses*

Lawrence H. Allen, New York, New Haven & Hartford R. R., Maintenance of Way Department, South Station, Boston, Mass. —Charles B. Ambrose, 14 Beacon Street, Boston, Mass.—Carl H. Bangs, care of Densmore & Le Clear, 88 Broad Street, Boston,

Mass.—John S. Barnes, Merrell-Soule Company, Syracuse, N.Y. —Howard E. Batsford, Roessler & Hasslacher Chemical Company, Perth Amboy, N.J.—C. L. Batchelder, City Engineer's office, Lowell, Mass.—George M. Belcher, care of W. H. McElwain Company, Manchester, N.H.—Henry W. Blackburn, Instructor in Mechanical Engineering, University of Vermont, Burlington, Vt.—Wilfred E. Booth, Standard Gauge Manufacturing Company, Foxboro, Mass.—Donald Bowman, Engineering Department, Commonwealth Edison Company, 84 Market Street, Chicago, Ill.—C. H. Boylston, transitman, Grand Trunk Railway, 1 Cowan Avenue, Toronto, Ont.—Philip C. Brown, care of J. B. Williams & Sons, Dover, N. H.—Douglas Cairns, 621 Albany Street, Boston, Mass.—Walter E. Caldwell, care of W. E. Caldwell Company, Brook & D Streets, Louisville, Ky.—H. R. Calloway, 170 Summer Street, Boston, Mass.—Burton W. Cary, 53 State Street, Boston, Mass.—Charles J. Carter, Instructor in Mechanic Arts, University of Maine, Orono, Me.—Chester S. Colson, Yorick Club, Lowell, Mass.—R. W. Cushing, Cohassett, Mass.— J. C. Childs, 4002 Highland Avenue, Kansas City, Mo.—E. S. Church, Indianapolis, Ind.—S. Lock Davidson, Abstracter, Court House, Wichita, Kan.—H. W. Dun, Jr., Bridge Inspector, New York Central & Hudson River R. R., Malone, N.Y.—Alexander Ellis, Jr., care of Russell & Fairchild, 20 Kilby Street, Boston, Mass.—R. C. Folsom, Standard Refinery, Granite Street, Boston, Mass.—W. C. Folsom, Chief Sanitary Inspector, Board of Health, City Hall, Cincinnati, Ohio.—W. D. Ford, 7 St. Paul Street, Cambridge, Mass.—A. L. Gardner, Assistant Works Manager, Roessler & Hasslacher Chemical Company, Perth Amboy, N.J.— H. T. Gerrish, Eastern Dredging Company, 247 Atlantic Avenue, Boston, Mass.—Irving M. Guilford, Assistant to Treasurer, Ball & Socket Mfg. Co., West Cheshire, Conn.—Carl A. Hall, Concord, N.H.—Melville B. Hall, Westinghouse Electric & Machine Co., St. Louis, Mo.—Sherwood Hall, Jr., Cadillac Automobile Company, 372 Boylston Street, Boston, Mass.—Arthur N. Hastings, Corrugated Bar Company, St. Louis, Mo.—Arnold W. Heath, 534 Hyde Park Avenue, Hyde Park, Mass. (after May 1)—Robert D. Hennen, County Road Engineer, Morgantown, W.Va.— Ira G. Hersey, Hingham, Mass.—A. R. Hunter, Noiseless Typewriter Company, Middletown, Conn.—W. B. Hunter, Director Industrial Department, Fitchburg High School, Fitchburg, Mass. —W. A. Johnston, Jr., S. S. White Dental Manufacturing Company, Prince Bay, Staten Island, N.Y.—Charles F. Joy, Jr., Transitman, Boston & Maine R. R., Engineering Department, North Station, Boston, Mass.—Karl R. Kennison, 815 Banigan Building, Providence, R.I.—W. B. Kirby, traveling on the M. I. T. Traveling Fellowship.—J. A. Kydd, Assistant Chemist, American Woolen Company, Riverside Worsted Mills, Providence, R.I.—Chester B. Lambirth, State Trade School, New Britain,

Conn.—George C. Lees, Mechanical Engineer, National Metal Lath Company, Plainville, Conn.—A. A. Longley, Factory Mutual Fire Insurance Company, 31 Milk Street, Boston, Mass.—S. C. Lyon, 47 Paul Street, Newton Center, Mass.—J. C. McGowan, Jr., Chief Chemist, Joseph Campbell Co., 32 North Front Street, Camden, N.J.—J. Scott MacNutt, Health Officer, 227 Main Street, Orange, N.J.—R. E. Manning, 31 Milk Street, Boston, Mass.—A. C. Merrill, Instructor in Mechanical Engineering, University of Pennsylvania, Philadelphia, Pa.—Peter C. McLaughlin, of McLaughlin & Siebert, Architects, Agricultural Bank Building, Pittsfield, Mass.—Harold S. Osborne, Engineering Department, American Telegraph & Telephone Co., 15 Dey Street, New York, N.Y.—Robert T. Pollock, Ashland, Mass.—Mathew Porosky, Estimating Engineer, Holtzer Cabot Electric Company, 621 Albany Street, Boston, Mass.—H. A. Rapelye, Sales Department, Westinghouse Machine Company, 500 Westinghouse Building, Pittsburgh, Pa.—Ralph T. Regnell, Assayer, Right of Way Mines, Cobalt, Ontario.—Joseph G. Reid, Supervising Engineer, Buckeye Cotton Oil Company, Atlanta, Ga.—H. F. Richardson, 112 Lafayette Avenue, Brooklyn, N.Y.—Joseph B. Sando, Chief Engineer, Centrifugal Pump Department, Goulds Manufacturing Company, Seneca Falls, N.Y.—Horace S. Sargent, Stanley Motor Carriage Company, Newton, Mass.—Lieut. Charles M. Steese, Coast Artillery Corps, U.S.A., Fort Terry, N.Y.—James M. Talbot, S. S. White Dental Manufacturing Company, Prince Bay, Staten Island, N.Y.—Robert B. Todd, American Dyewood Company, 115 High Street, Boston, Mass.—Aram Torrossian, 50 Bromfield Street, Boston, Mass.—Franklin T. Towle, 84 State Street, Boston, Mass.—Douglas B. Turner, Isabella, Tenn.—Edmund L. Warren, 348 Congress Street, Boston, Mass.—J. W. Wattles, 3d, 39 Boylston Street, Boston, Mass.—Harry Webb, 348 Congress Street, Boston, Mass.—Allen T. Weeks, Acushnet Process Company, New Bedford, Mass.—Geoffrey W. Welch, Upper Iowa Power Company, Decorah, Ia.—Charles W. Whitmore, Superintendent, Monks & Johnson, Engineers, 7 Water Street, Boston, Mass.—Clifford L. Wade, 18 Willis Street, New Bedford, Mass.—W. Elliot Weinz, P. O. Box 55, Atlanta, Ga.—Conrad Youngerman, care of G. Henri Desmond, Architect, 15 Beacon Street, Boston, Mass.—Horace E. Allen, Toledo Railway & Light Company, Toledo, Ohio.—Howard E. Batsford, Roessler & Hasslacher Chemical Company, Perth Amboy, N.J.—S. H. Daddow, of Youse & Daddow, Automobile Dealers, Pottsville, Pa.—Allston Dana, Empire Bridge Company, Elmira Heights, N.Y.—Samuel F. Hatch, Fairbanks Scale Company, St. Johnsbury, Vt.—H. F. Kuehne, adjunct professor of Architecture, University of Texas, Austin, Tex.—Donald H. Maxwell, care of Alvord & Burdick, 1212 Hartford Building, Chicago, Ill.—Alexander C. Sloss, Jr., City National Bank

Evanson, Ill.—A. H. Thompson, 722 Franklin Street, Melrose Highlands, Mass.

The annual dinner was held at the American House, Hanover Street, Boston, Tuesday evening, March 14, at 7.30 p. m. Bursar Rand was the guest of the evening. The following were present: "Pop" Gerrish, who presided, Rudolph B. Weiler, Lawrence H. Allen, Carl H. Bangs, W. E. Booth, Harry S. Chandler, Frederick A. Cole, Leslie B. Ellis, Alexander Ellis, Jr., W. D. Ford, H. W. Flaherty, Sherwood Hall, Jr., C. F. Joy, Jr., C. Waldo Morrison, Edward J. Scott, Frank W. Sherman, Charles W. Whitmore. For the Alumni Association Gerrish reported on the Congress of Technology and the establishment of a summer school of civil engineering. It was decided to cut the local mailing list in half by removing the names of all fellows who do not show any interest in class affairs, in order to reduce the cost of mailing for the bi-monthly dinners. It was decided that it would be unwise to discontinue sending out return reply postal cards. Though ill, Mr. Rand kept his promise to come to the dinner, but was unable to remain long. In appreciation of the sacrifice he made to attend, the class voted to instruct the resident secretary to have some flowers, with a suitable note expressing the feelings of the members, placed on the bursar's desk at the Institute before he arrived there next morning. The resident secretary read a number of letters from fellows who were unable to be present, and information concerning absent members, addresses, etc., was given on request of those present. A rising vote of thanks was given the resident secretary for the efficient manner in which he has conducted the class business. The meeting adjourned at 10 p. m. The next bi-monthly meeting is May 9, at the Technology Club.—It would be considered a great favor if members after notifying us that they will attend a dinner will also notify us when they change their minds or find that they cannot come.

Last May the class lost by death M. T. Jones, Jr., but as it was not reported at once we are only now able to present the following appreciation:

Maurice Trimble Jones, Jr., '08, Research Associate in Applied Chemistry at the Institute, died suddenly on May 25, 1910, of cerebral hemorrhage. That he was a man of the highest character and ideals can be best illustrated by the following incident:—Upon graduation he was offered, by a brewing company, a position at double the salary most of his classmates were getting. His work was to be partly research and partly routine work, including check analyses on brewing materials. He said that while he had no crow to pick with the brewing business, he had decided to devote his life to those things which made for the betterment of men, and as he didn't believe that the results of the work offered would be for the ultimate uplift of humanity, he could not accept. When he died, every man in the research laboratory realized that Jones had had a part

in his work in the way of advice, consultation and interest, and there was no work in the laboratory that did not sueffr because of his death. After his death it was discovered that part of his evenings had been spent in teaching English, to a Chinese class without compensation, and that he had two Sunday School classes among the poor. His whole life work was devoted to those things which were helpful and to those things which made for righteousness.

1909.

CARL W. GRAM, *Sec.*, 131 North Twenty-second Street, Philadelphia, Pa.

MAURICE R. SCHARFF, *Res. Sec.*, Mass. Inst. of Tech., Boston, Mass.

I

The class dinner at the American House on February 2 was a great success. Only fifteen showed up, but they had such a good time that they voted to have dinners more frequently in future, and if possible, once a month. On account of the Technology Congress, however, it has been decided to hold the next dinner on April 10, as fitting preparation for the big time in Symphony Hall later in the same evening. Every 1909 man who attends the Congress, and that ought to include every one who can possibly find an excuse to get to Boston, should be at that dinner.—At the dinner on February 2 the following were present: Ayres, Scharff, Dow, G. T. Palmer, W. H. Jones, Bennett, M. E. Kelley, Spencer, Reeds, Nisbet, A. L. Shaw, Jacobs, Clifford and Thornley.—On the notices for the dinner of April 10 there will be a reminder to those who have not yet paid their dues for 1911. It is hoped it will prove effective, for strange as it may seem, it costs money to get out notices, etc., so look through your receipt file for a receipt for class dues, and if you don't find it, mail $1 to A. L. Shaw, 234 Newbury Street.—One of the best things about the last dinner was that the reply cards brought much interesting news from many of the fellows who were too far away to come. It is hoped that this will always be so, and that whenever a 1909 man mails anything to the secretary, he will take time to write a few words of news of himself or of other 1909 men he has seen. Much of the class notes below have been gathered in this way.—The Friday luncheons at the American House Rathskeller continue successful, and any 1909 man can usually find several classmates if he drops in there on Fridays between 12.30 and 1.30.

II. *Matrimonial*

One striking thing about the reply cards was the number of marriages that should have been reported before. Don't hide your light under a bushel; make a mental note to add the class secretary's name to the list of those to whom announcements are to be sent.—H. F. Ballard (I.) was married last August to Miss Florence A. Berry of New Salem, Mass.—H. E. Myers ($IV._2$) was married October 3, 1910, to Miss Edith Harriett Cobb of Newton Upper Falls, Mass. He writes, "Everything is decidedly lovely. Advise all others to go and do likewise."—Matthew Porosky (VI.) was married January 10, 1911, to Miss Harriet B. Isaacson of Roxbury, Mass.—M. E. Kelley (I.) was married October 29, 1910.—H. T. Gidley (I.) was married January 3, 1911, to Miss Gertrude E. Gibbs of Danvers, Mass.—Merton Belcher (IV.) was married in San Francisco, December 22, 1910, to Miss Janet E. Forbes of Berkley, Cal.—A card from Mrs. Stanley M. Udale brought the first news we had heard of the marriage of Miss Packwood (IV.) to Udale, '07.—X. R. Smith (XIII.) writes that Besselievre (XIII.) was married last fall.—Burr Robinson (III.) was married June 10, 1909, to Miss Clarity S. Giles of Boston. He thinks he was "one of the first of the '09 fellows to go."

Prospects

That future class notes will not be entirely devoid of a matrimonial section is indicated by the occasional news of an engagement that reaches the secretary.—G. E. Hodsdon (III.) writes blushingly as follows: "Reading of the other fellows' doings decided me to stop hiding my light. 'I've been and done it too,'—my engagement was announced about Christmas to Miss Rena C. Bergengren of Lynn."—Thornley (II.) doesn't give many particulars, but writes, "Found one who promised to live a dual life with me. I rung her in."—And while we haven't heard any news in this line from Hartwell (II.) we have hopes; for Heidelberg (II.) writes from Houston that "Cupid is giving Hartwell a course of study now.—Finally, all will join in congratulating Miss Longyear (IV.) on her engagement, reported in the *Boston Herald*, March 1, as follows:—"New York, February 28.—The engagement of Miss Helen M. Longyear of Brookline, Mass., to Carroll Paul, civil engineer in the United States navy, was announced at a small tea given at the Hotel Gorham today by Mrs. J. M. Longyear."

III

The resident secretary acknowledges with pleasure the interesting letters and cards that have reached him from members of the

class, and hopes every 1909 man will take the time occasionally to write in about himself.—Our secretary, Carl Gram, has moved east, and is now in Philadelphia. He talks paint like a streak nowadays, and writes as follows:—"I met Glancy (VI.), Fred B. Wood (II.), John Christie (V.), besides many other Tech men at a regular smoker given by the Philadelphia Alumni in January the first week after arriving here. Each week they have a meeting to practice bowling to get in shape for the contests with the Washington and Baltimore teams." He also adds many interesting facts about his business: "I am with the Pyramid Paint Company in charge of the sales end and it keeps me hustling. Our product is as good and as lasting as the name, nothing else on the market to touch it. I wish I could hit Boston, but not for some time I guess."—D. K. Bullens (III.) accounts for his doings since he left the Institute in January, 1909, as follows:—

I amused myself for a year and a half by teaching metallurgy at the Pennsylvania State College; during the last year I was elected secretary to the faculty of the School of Mines. During the summer of 1909 I did some design work in metallurgical mill construction, and this last summer I was in the engineering department of the Chrome, N.J., refinery of the United States Metals Refining Company. I then spent three months in the graduate school of Applied Science at Harvard to round out my knowledge of metallography.

I then obtained my present position as metallurgical engineer of the Parish Manufacturing Company at Reading, Pa. We turn out special heat-treated pressed steel automobile frames, supplying many of the most important automobile companies. I have entire charge of all the metallurgical work, such as heat treatment, chemical analysis, physical tests, and in fact any thing that has to do with the "steel" side of the business. I might add that the company employs about 350 men, working night and day. I have a number of men directly under me, so that I have my own time free for general supervision and for working out such technical problems as may arise.

—Ray Allen (II.) has been heard from, and is evidently still up to his old tricks, and taking a leading part in the Ivory Soap Minstrels. He writes:—

I am now with the Proctor & Gamble Co. I also use Ivory Soap. I started in November scraping floors and sweeping them (to save soap). I progressed through the different processes, and am now running some fuel tests on test coal sent in by companies which are bidding for the new contract. The plant consists of forty-five buildings built of granite and a fine baseball diamond and tennis court. We have just given a minstrel show which crowded Music Hall (seating 3,600) twice, and drew a fair crowd at Madisonville. I was one of the "bones."

—And P. H. Chase (VI.), gives this account of himself:—

Just a word about myself since graduation. During the academic year 1909–10, I was at Harvard in the graduate school of Applied Science and in June, 1910, got the degree of M.E.E. (Master of Electrical Engineering). Last November I started work here for the Public Service Electric Company, and am assistant to the Superintendent of Distribution for Newark and vicinity.

Some of our classmates have managed to get a long way from Boston. Word has reached the secretary that H. C. Schriefer is to be in Siberia, mining copper, until November, 1911. And Fuller (I.) writes on February 27, from Santo Domingo: "Am eighty miles in the interior of the island, a three days' mule trip over the worst roads in the land and news is scarce. The last States paper we saw was January 1. Haven't seen a white person except our own party for two months."—Tillard (I.) writes from Khartum, Sudan: "My home here for three months has been a mud house on the banks of the Nile. I sometimes long for the inspiration of a T.T., and wish someone would take me back on a special camel to the glorious Institute. Am just off for three months with camels and tents and blacks working for me along the White Nile."—Mitchell (XI.) is up in British Columbia, and Van Eetvelde (II.) writes from Belgium that he is about to go to British Columbia to settle.—Jack Elbert (X.) is still a German student in Berlin, and writes: "Finally have my Arbeit started, and things are going first rate. Hope to see Bill Kelly at Leipzig soon."—Speaking of Bill Kelly, he wrote an interesting account of his studious life in Leipzig which seems to consist of traveling about from Leipzig to St. Moritz in Switzerland, enjoying all the winter sports and fine cross-country trips on skis.—F. M. Loud (VI.) says that he is busy learning the electric railway business with the Public Service Railway Company at West Hoboken, N.J., and that P. L. Adams (VI.) is with the same company.—Beers (X.) is superintending the construction of a ten-story hotel in Jacksonville, Fla.—I. W. Wolfner (II.) writes "I have just been elected assistant treasurer of the National Cooperage and Woodenware Company of Peoria, Ill. I am also purchasing agent. Most of my work is looking after the repair and operation of the power equipment of our two Peoria factories, whose combined output is 4,000 whiskey or oil barrels daily. Expect to be in Boston about April 12 for a couple of days."—Stephenson (X.) wrote in January: "Getting ready for mid-years. Have made out the qualitative exam. It's easier to make it out than to answer it. Have started a thesis for an M.S. but don't expect to finish it till 1912."—Rosenblatt (VI.) is assistant to the resident engineer on the construction of a hydro-electric plant and writes: "Am up in the wilds of Minnesota, nine miles from anywhere, where the themometer hovers around 43 below."—A. B. Morrill (XI.) is still "making experiments and juggling results at the Sewage Testing Station of the Chicago Sanitary District."—C. R. Main (II.) is engaged in putting up a new mill for the Clinton Wire Cloth Company of Clinton, Mass.—L. H. King (IV.) says, "Saw Marshall, '09, and Lougee, '09, recently. The latter is in the furniture business in Hartford."—Bill Jenkins (II.) wrote: "A good picture of Eugene Luening appears in the *Iron Trade*

Review of January 26, 1911, in an article on the 'Oxyhydric Process of Cutting and Welding.' When I last heard from Schlitz he said he was going into this business for himself."—Jaeger (III.) writes that he has had charge of the laboratory of the American Smelting and Refining Company at Perth Amboy, N.J., since last September.—Hubbard (II.) writes that he is "designing and supervising installation of mechanical equipment of a new factory for the Mianus Motor Works, Mianus, Conn."—Hoyt (VII.) is health officer of Summit, N.J., and Palmer (VII.) has recently taken a position as Sanitary Inspector with the state board of health of New Jersey.—Healy (V.) has just "accepted a position as chief chemist with the Hartford Rubber Works, makers of Hartford Tires."—Hartwell (II.) writes, "I should indeed like to see a few of the boys. Heidelberg is the only '09 man down this way except myself, but there are altogether about a dozen Tech men in Houston."—H. M. Glazier (IV.) is instructor in architecture at the State College, Pennsylvania.—Matt. Fletcher writes from Indianapolis that he is breaking stone for the Bedford Stone Construction Company. He adds "Mr. and Mrs. M. K. Weill visited us recently."—W. C. Ferguson (II.), chief engineer of the Gilbert Hunt Company, writes from Walla Walla, Washington, that he saw Spike Hatton in Portland, Ore., some time ago.—Bradley Dewey (II.) is engaged in research work for the American Sheet & Tin Plate Company at Pittsburg, and writes that he has just finished equipping a research laboratory for them.—M. M. Davis (VI.) is assistant examiner in the United States Patent Office, and when he wrote, was plugging for exams. in George Washington University Law School.—Daley (III.) is way out in Bingham Canyon, Utah.—Cary (I.) is instructor in mathematics at Princeton.—Brooks (I.) is foreman on a 50-inch steel rising main for the Tennessee Coal and Iron Company at Ensley, Ala.

IV. *Lost Department*

The secretary will be grateful for information regarding the present whereabouts of the following classmates: Ernest Curley, E. M. Mason, Paul H. Mayer, Charles Freed.

Changes of Addresses

S. E. Altamirano, P.O. Box 196 F, Mexico, Mex.—Thomas H. Atherton, Jr., Wilkesbarre, Pa.—Harold F. Ballard, 1124 Winina Street, Chicago, Ill.—Albert J. Barnes, New York Telephone Company, 25 Dey Street, New York, N.Y.—Lewis Barnett, 99 Marcy Avenue, Brooklyn, N. Y.—Chas. Batchelder, City Engineer's Office, Lowell, Mass.—Daniel Belcher, Stafford Com-

pany, Readville, Mass.—A. C. Besselievre, care of Lake Torpedo Boat Company, Bridgeport, Conn.—E. M. Bettington, P.O. Box 149, Johannesburg, Transvaal.—W. E. Boardman, 54 Pleasant Street, Wakefield, Mass.—J. C. Bollenbacher, 1612 Corn Exchange Bank Building, Chicago, Ill.—Clarence J. Brown, 251 Chamber of Commerce, Minneapolis, Minn.—Maurice L. Bullard, care of W. H. McElwain Company, Manchester, N.H.—D. K. Bullens, care of Parish Manufacturing Company, Reading, Pa.—Ballard Y. Burgher, Y. M. C. A. Building, Baltimore, Md.—Richard L. Cary, 23 Madison Street, Princeton, N.J.—Philip H. Chase, 38 College Street, Hanover, N.H.—Eugene L. Connolly, Caryville, Mass.—James H. Critchett, 1431 East Sixty-sixth Street, Chicago, Ill.—Mitchell J. Daley, Box 753, Bingham, Utah.—Frank H. Dunnington, care of Ontario Power Company, Niagara Falls, N.Y.—John J. Elbert, Kaiserdamm 113, Charlottenburg, Berlin, Germany.—G. Wilbur Everett, 35 Mt. Vernon Street, Boston, Mass.—Thornwell Fay, Jr., 1507 Rusk Avenue, Houston, Tex.—James I. Finnie, 240 Chestnut Street, Clinton, Mass.—Lawrence R. Forrest, Y. M. C. A., Lebanon, Pa.—Bernard R. Fuller, care of Director of Public Works, Santo Domingo, San Dom.—George M. Gadsby, care of Water Company, Warren, Pa.—R. Clifford Glancy, 2111 North Twelfth Street, Philadelphia, Pa.—Harold M. Glazier, State College, Pa.—Carl Gram, care of Pyramid Paint Company, 131 North Twenty-second Street, Philadelphia, Pa.—W. Duncan Green, 506 Peebles Street, Pittsburg, Pa.—Derick S. Hartshorn, 43 Wendover Street, Dorchester, Mass.—Harry L. Havens, Kansas City Terminal Railroad Company, Kansas City, Mo.—George A. Haynes, care of Haynes, Porter & Co., 65 Beverly Street, Boston, Mass.—Leon J. D. Healy, 152 Maple Street, New Britain, Conn.—H. H. Howland, Missouri Pacific Railway, Title Guarantee Building, St. Louis, Mo.—Robert N. Hoyt, Summit Board of Health, Summit N.J., or 52 De Forest Avenue, Summit, N.J.—Robert Inglee, Westdale, Mass.—W. B. Van Inwegen, Board of Water Supply, Valhalla, N.Y.—Frederick Jaeger, 172 Rector Street, Perth Amboy, N.J.—Lewis H. Johnson, 58 Willard Avenue, Bloomfield, N.J.—Barry H. Jones, 73 Hooker Avenue, Poughkeepsie, N.Y.—Alfred G. Kellogg, 62 Greenough Street, Brookline, Mass.—William J. Kelly, Hayden Street, 711 R, Leipzig, Germany.—Robert C. Kerr, 1720 Railway Exchange, Chicago, Ill.—Andrew Lewis, 178 Maple Street, Springfield, Mass.—Lynn A. Loomis, Technology Chambers, Boston, Mass.—William J. McAuliffe, 135 North Pearl Street, Albany, N.Y.—S. N. McCain, 492 Ludlow Arcade, Dayton, Ohio.—Thomas G. Machen, chez Mme. Reinburg, 4 Passage Stanislas, Paris, France.—Kevork Madenigian, 335 Madison Avenue, New City, N.J.—Andrew L. Matte, 178 Maple Street, Springfield, Mass.—Lincoln Mayo, 11 Robeson Street, Jamaica Plain, Mass.—Edward D. Merrill, 1310 Pleasant Street,

Des Moines, Ia.—Arthur B. Morrill, 3932 Lake Avenue, Chicago, Ill.—Ramon F. Munoz, care of Cia Minero De Penoles La Ojuelo, Eslado De Durango, Mex.—Henry E. Myers, 135 Ash Street, Akron, Ohio.—John W. Nickerson, care of Sayles Bleachery, Saylesville, R.I.—Haylett O'Neill, 600 West Fifty-ninth Street, New York, N.Y.—Harold W. Paine, 53 Haskins Street, Providence, R.I.—Herbert H. Palmer, Georgetown, Mass.—Harvey S. Pardee, 6521 Vernon Avenue, Chicago, Ill.—J. Stewart Pierce, Scott Building, Tulsa, Okla.—Samuel F. Perkins, 110 Tremont Street, Boston, Mass.—Henry R. Putnam, 908 W. P. Story Building, Los Angeles, Cal.—Charles W. Radford, 130 Sumac Street, Wissahickon, Philadelphia, Pa.—W. Carleton Read, 931 Maple Street, Sault St. Marie, Mich.—Edward J. Riley, 139 East Twenty-seventh Street, New York, N.Y.—Arthur L. Shaw, 234 Newbury Street, Boston, Mass.—Robert L. Smith, 94 Grove Street, Winchendon, Mass.—Thomas Spooner, 408 Todd Street, Wilkinsburg, Pa.—J. N. Stephenson, 2011 North Ninth Street, Terre Haute, Ind.—Herbert J. Stiebel, 408 Judge Building, Salt Lake City, Utah.—B. H. St. John, office City Chemist, Kansas City, Mo.—Prof. Lockwood J. Towne, Station A, Lincoln, Neb. —Channing Turner, care of Sears & Smith, 516 Howard Building, Providence, R.I.—Mrs. Stanley M. Udale, 2704 Farnam Street, Omaha, Neb.—George E. Wallis, University of Michigan, Ann Arbor, Mich.—Harry Webb, 237 Beacon Street, Boston, Mass.— Harold E. Weeks, Sprague, Keyes & Jackson, 88 Broad Street, Boston, Mass.—Edward E. Wells, 1012 West Lafayette Avenue, Baltimore, Md.—Malox P. Whipple, 66 Lincoln Street, Hudson, Mass.—E. T. Williams, Imperial Maritime Customs, Newchwang, China.—H. B. Winterstein, Belle Plaine, Iowa.—Paul M. Wiswall, care of C. T. Carbon Works, Fostoria, Ohio.—Philip E. Young, Huttleston Avenue, Fairhaven, Mass.—M. H. Foss, 4625 Lake Avenue, Chicago, Ill.—G. T. Palmer, 2138 East Hanover Street, Trenton, N.J.—T. A. Tillard, care of Sudan Irrigation Company, Khartum, Egypt.

1910.

JOHN M. FITZWATER, *Sec.*, 119 Henry Street, Brooklyn, N.Y.
G. BERGEN REYNOLDS, *Res. Sec.*, Southbridge, Mass.

On Friday evening December 9 the Technology Club of New York City reserved its small dining room for the use of those members of the class of 1910 who were in and about New York. About fifteen men responded to the notices. The men marched into the dining room together, and soon after being seated were greeted by the club members with welcoming cheers for 1910, to which 1910 responded with a rousing regular M. I. T. yell. After dinner the club members vacated the center lower floor of the club house for the use of the new class. A general good time was

enjoyed; each man being interested in the other's work. H. S. Gott officiated at the piano, and many of the good old Tech songs were sung. Before leaving, arrangements were made for another dinner early in January. The plan of a monthly dinner is to be followed, at which one or two members of the class are to give an account of their work. Those present were, Abbott Allen I., Harold E. Akerly, IV., Philip W. Burnham IV., Alexander G. Batsner IV., John M. Fitzwater I., Herbert S. Gott, VI., Karl W. Gasche X., Ira S. Hartman VI., Frank E. Hodges VI., George W. McRae VI., Elford M. Potter VI., Guy F. Shaffer IV., Walter F. Spalding IV., Horace E. Stump X. There were eleven men present at the second monthly dinner of the class of 1910 held at the Technology Club, New York, January 9, 1911. Potter gave a very interesting account of his work in connection with the Metropolitan Street Railway Company. Every 1910 man in New York or its vicinity should send his address to John M. Fitzwater, 119 Henry St., Brooklyn, N.Y., in order that he may receive announcements of the monthly dinners.—The engagement of Miss Elizabeth Balfour of Brighton and Chester Jackson Briggs, Course III., of Newtonville is announced.

Marriages

George L. Mylchreest was married to Iva A Harris of Middletown, Conn., January 12, 1911. Mr. and Mrs. Mylchreest will make their home in Rockville Conn., where Mr. Mylchreest is in charge of the Rockville branch office of the firm of consulting engineers, Buck & Sheldon of Hartford, Conn.—Merrill William Tilden, II., was married to Laura Massengale Rhett on February 8, 1911.—Louis Griffin Rowe, I., was married to Iva Louise Marshall March 2, 1911.—Arthur John Foote, I., was married to Clara Rebecca Smith November 19, 1911.

Changes of Addresses

Course I.—Spencer B. Lane, 160th Company, Coast Artillery Corps, Fort Stevens, Oregon, United States Army.—Pelayo Chinchilla is completing his studies at the Institute.—Allston T. Cushing, Fairville, St. John Co., New Brunswick, is with A. E. Hanson, C. E. Frederickton.—Allen Curtis, 26 Parker House Building, West Somerville, Mass., is with the Boston & Albany Railroad in the drafting department.

Course II.—Charles A Rott, 479 64th Avenue West Ellis Wis., is a student in the Gas Engine Department of the Allis-Chalmers Company.—Ernest L. Patch, United States Naval Academy.

Course IV.—H. Scott Gerity, 2530 Endora Street, Denver, Col., is with W. E. Fisher and A. A. Fisher, architects.

Course VI.—H. Behr, 85 Grone Street, Claremont, N.H., is with the Sullivan Machine Company.—John B. Myrick, 19 Exeter Street, West Newton, is with the New England Telephone and Telegraph Company, traffic department.

The Technology Review

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AN IMPRESSIVE ANNIVERSARY

A remarkable gathering of Alumni at the Congress of Technology—The papers were of a high order and the social events brilliant

The celebration of the fiftieth anniversary of the granting of the charter to the Institute of Technology was an unqualified and gratifying success in every feature.

The attendance exceeded the expectations of the committee and represented every portion of the United States. The papers read before the Congress were of a high order and at each session it was necessary for one of the sections to adjourn to Huntington Hall in order to accommodate the crowds unable to find seats in the lecture room.

The social events were as remarkable as the Congress itself. On Monday evening, April 10, the floor of Symphony Hall was so crowded with Tech men that it was difficult to move about, and the balconies were filled with friends of alumni and undergraduates. At the banquet on Tuesday evening, nearly eight hundred men were seated at the tables, while the balconies were filled with relatives and friends of the alumni. The enthusiasm which was universal and spontaneous bespoke the earnest interest and substantial support of all the former students of the Institute.

The celebration was a success, not only because it showed the tremendous strength of the alumni, but principally, because it impressed the people of New England and the whole country with the fact that, to a considerable degree, the industrial advance of the nation is due to the principles laid down by President Rogers and inculcated for half a century at the Massachusetts Institute of Technology.

Among the important announcements made by President Maclaurin was the gift of a member of the class of '93, who has purchased and presented to the Institute about one thousand acres of land in Maine to be used for the Summer School of Civil Engineering, while another member of the class of '93, Edward M. Hagar, president of the Universal Cement Company of Chicago has offered to donate all the cement used in the construction of the new buildings.

The papers read at the Congress of Technology attracted so much attention that every mail brings many letters asking if these papers will be published by the Institute. The expense attending the publication of a memorial volume containing the papers read at the Con-

gress would be very great, greater than the Institute feels warranted in expending for such a purpose at this time. Arrangements have been made, however, to have these papers printed in various professional and trade journals and the REVIEW will print a bibliography of the same as soon as it can be compiled.

CONGRESS OF TECHNOLOGY

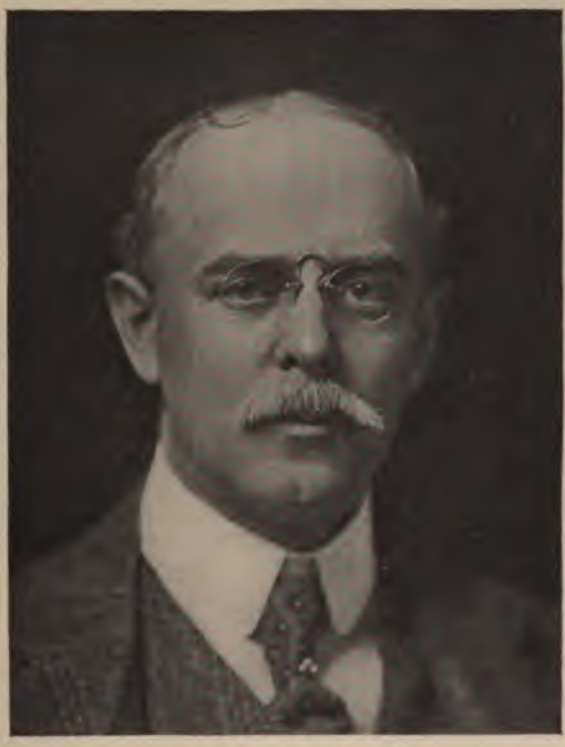
The Congress of Technology was auspiciously begun in Huntington Hall on the afternoon of April 10th with an address by President Maclaurin who spoke in part as follows:

THE PRESIDENT'S ADDRESS

The more one looks into the matter, the more is he impressed by the fact that, although many enlightened men coöperated in launching the Institute on its course, the enthusiasm and the guiding power were supplied by one man—Rogers. His choice of Boston as a suitable place for the new venture was made deliberately. Be it remembered that he was not a New Englander, that he was nearly sixty years of age when the Institute was founded, and that until then he had spent the greater part of his active life in the Southern States. To the serenity of outlook on human affairs that marks the scientist and the philosopher, he added an element of passion (perhaps derived from his Irish ancestors), when he touched the realm of education. Nowhere in the world is the supreme worth of children more thoroughly appreciated than in America; nowhere is the preparation for their future regarded more generally as one of the holy offices; nowhere in America is this sacred duty more clearly recognized and more anxiously discussed than in Boston. So Rogers placed the Institute here, not because of the paucity of schools in this neighborhood, but because of their abundance; not because of their weakness, but because of their strength. This, he thought, should be good ground in which to sow fresh educational seed, and ere long his expectations were fully justified. Men of light and leading in the community gave hearty support to the new venture. Governor Banks favored state aid to the Institute on the ground that such an institution would "keep the name of the Commonwealth forever green in the memory of her children." His successor, Governor Andrew, who signed the Institute's charter, was greatly interested, and did all that he could to help. "We ought," he said "to start out on a broad gauge and inaugurate a great plan looking to the long future of the Commonwealth." An imposing array of individuals and of societies petitioned the legislature to aid in forwarding the new scheme. Had Rogers chosen his location less wisely, he might easily have failed to enlist such support. The advantages of his chosen ground became still more apparent at the critical time when men had to be found to carry out the new ideas. He realized that this was the point where he was to gain victory or suffer defeat, and in spite of the exceptional difficulties presented, he soon succeeded in surrounding himself with the right men. The original Faculty of ten professors formed a vigorous group, with great reserve of strength, physical as well as mental. They all lived to a ripe old age, and nearly all earned distinction in their own fields. Four of the men are still happily with us, including the professor of analytical chemistry, Charles W. Eliot, whose vigor is not perceptibly diminished after forty years of exacting toil in the presidency of Harvard.

It seems clear, then, that one important factor in the Institute's success has been the place of its birth. And if the place was propitious, the time was in some respects peculiarly so. It was a period of upheaval, to be followed immediately by one of rapid forward movement. The charter was granted within a few days of the breaking out of hostilities marking the beginning of the great war. The national crisis, of course, turned men's thoughts away from science and from education. About a fortnight after the granting of the charter, Rogers attended a meeting of the Thursday Evening Club, and was called upon to speak on some matter pertaining to science. According to a newspaper report of the time "Professor Rogers very gracefully declined

to discuss the topic proposed, but made instead a stirring appeal to the club in favor of providing a regiment of our brave volunteers with knapsacks." Such a time seemed peculiarly unpropitious for initiating a new educational movement, and no doubt the war checked the early growth of the Institute very seriously. However, after a few years, the Nation was ready to turn with undivided mind to the great problems of development, and the seed having been sown earlier in good ground, the Institute sprang up rapidly and reaped the harvest of hope engendered by the settlement of the grave moral and political questions to which the war was due. In the quieter field of human activity, the field of thought, the world was experiencing an equally great upheaval. Darwin's great book had just been published, with results of the first magnitude in shaping the lives on which the world of intellect was to move forward for the next half-century. Kirchhoff's idea of spectrum analysis was just opening a new era in physics and in astronomy. Faraday was nearing the end of his great career, but his splendid discoveries had not yet borne fruit in the field of practise. His work, however, was having its influence on the mind of Maxwell, the greatest of whose scientific achievements was announced in 1865, the year in which the Institute actually began to work. The world was just entering on a period of remarkable activity in the practical applications of science. The scientists were still struggling with the difficulties of cabling. The Boston of those days was somewhat proud of its critical spirit and in 1859 a writer in the Boston *Courier* proved at great length that all the so-called messages through the Atlantic cables were fictitious, mere shams to save the stock for a time. Edison, who was living in Boston in 1868, and whose son is an undergraduate at this Institute today, was just beginning his wonderful career as an inventor. A few years later, one of the greatest marvels of scientific achievement, the electric transmission of speech, was to be demonstrated in this very city, indeed, in this very hall, by Alexander Graham Bell, through his invention of the telephone.



Arthur D. Little, '85, who conceived the idea of the Congress of Technology

At such a time and in such a place, an institution devoted to science and its applications had at least an excellent chance of success. The Institute would, however, never have achieved what it has, if other forces had not contributed to its success. Some of these have been mentioned earlier; but there is one of the very first importance, rarely, I think, appreciated at its real value, to which special reference should be made. *There has never been any uncertainty or indefiniteness as to what the Institute is aim-*

ing at in its scheme of education. Every serious student of education is struck by the fact that so many schools and colleges drift around, apparently without compass or rudder, with no definite idea as to what port they are trying to reach, or how they should go to reach it. Here, at any rate, is an institution that, *from the very outset,* has had very definite ideas on these matters, whether those ideas be right or wrong. Most of these ideas are set forth in Rogers' "Object and Plan," which forms a charter of the Institute not less valuable than that which Governor Andrew signed. At the time of writing it, Rogers was no novice in education. He was not far short of sixty, and had taught and thought on educational problems since very early manhood. He had discussed some such project as that of the Institute for twenty years at least, and his ideas thereon had gradually clarified and crystallized, as can be seen from the record of their development which is accessible to all.

Rogers has sometimes been charged with setting up a school in a spirit of antagonism to existing institutions. There is no ground for such a charge. He was too catholic in his tastes to fail to appreciate the good in others, and in advocating something new, he took the safe ground that there was room for difference in the field of education. He knew, as every educated man must know, that the fear of what is called *useful* knowledge is exaggerated, and for the most part groundless. He knew, as others do today that the oldest universities all began with a clear recognition of the bearing of their studies on definite callings; and he recognized clearly that it was not a merit, but a defect of these schools that most of them had failed to keep pace with the changes in the character of human occupations that time had brought forth. He saw, as Lowell did, that "new times demand new manners and new men" and that new conditions demand new schools. For the guidance of the new school, he laid down a few simple, but far-reaching principles, which have governed the Institute ever since. The first of these is the *importance of being useful.* There is, of course, no necessary antithesis between the individual and the social end in education. However, the laying of the emphasis *is* important, and Rogers laid it unhesitatingly on efficiency in the service of society. In his first address to the students at this Institute, he set forth the *value* and the *dignity* of the *practical* professions for which they were to prepare themselves. (Rogers, himself, be it remembered, was a pure scientist, president of the National Academy of Sciences, the friend of Darwin, Kelvin, Helmholtz, and the like.) In earlier discussions with his brother with reference to the plan of the Institute, emphasis had been laid on "the value of science in its great modern applications to the practical arts of life, to human comfort, and health, and to social wealth and power." And so when the Institute was actually founded the importance of science was kept steadily in view. He regarded the scientific habit of thought as specially valuable in practical affairs and consequently in education he laid greater stress on broad principles and their derivation than on details of fact, and he held that the *spirit* of science was more to be desired than all the gold of scientific knowledge. These are his words: "In the features of the plan here sketched, it will be apparent that the education that we seek to provide, although eminently practical in its aims, has no affinity with that instruction in mere empirical routine which has sometimes been vaunted as the proper education for those who are to engage in industries. We believe, on the contrary, that the most truly practical education, even in an industrial point of view, is one founded on a thorough knowledge of scientific laws and principles, and one which unites with habits of close observation and exact reasoning, a *large general cultivation.* We believe that the highest grade of scientific culture would not be too high as a preparation for the labors of the manufacturer." It will be seen from this that Rogers made no fetish of science, and that he welcomed every really liberal study. Some of the champions of the new school joined in the attack on the older learning; but Rogers

One of the plans suggested for the New Technology

had no sympathy with such views. "The recent discussions here and elsewhere," he said, "on the relative value of scientific and classical culture seem to threaten an antagonism which has no proper foundation in experience or philosophy." And although the study of the classics has never formed part of the Institute's courses, history, economics, languages and literature enter into its curricula far more extensively than is generally supposed.

Apart from his appreciation of the value of all sound learning, Rogers saw clearly that the whole controversy as to the relative merits of science and the classics in the field of education missed the mark by placing the emphasis in the wrong place. He understood that when one gets to the root of things in education, the *method* rather than the *subject* is of supreme importance, and his insistence on the value of method in teaching was the cardinal doctrine in his creed and the one that has contributed most to the success of the Institute. Doubtless his knowledge of the history of science turned his thoughts in this direction. He must have pondered over the question, as every serious student has done, why throughout the ages the world stood so still in the realm of science. It was not for lack of intellectual power, for no one who has examined the matter can fail to recognize that there really were giants of old. The failure came through attacking the problems by the wrong method. And Rogers concluded that much of the failure in education was due to similar causes. What method, then, is the right one? His fundamental idea here was not original with Rogers. It has been clearly expressed before, but rarely, if ever, adopted definitely as the basis of educational method and applied systematically throughout. The idea is familiar to us all today, the idea of *learning by doing*. "How can a man learn to know himself?" asked Goethe. "Never by thinking, but by doing." Add to this the doctrine of Carlyle that "the end of man is an action and not a thought, though it were the noblest," and you have the whole thing in a nutshell. Carlyle is often quoted as having said that the modern university is a great library. He would have been truer to his own doctrine if he had said that the modern university is a great laboratory. "The Institute," General Walker was fond of saying, "is a place not for boys to play but for men to work." Boys and men alike learn most effectively by working for themselves, and the *do-it-yourself* method has

been, I believe, the greatest factor in the success of this Institute of Technology.

Whatever be the explanation, there can be no doubt about the fact of its success. It is not merely that the Institute is now the largest institution of its kind in this country, and as regards the extent and variety of its courses and equipment, the most nearly complete in the world. It is not merely that it has grown so that there are a hundred students today for every one that took the preliminary course scarcely fifty years ago, and that amongst these students there are men drawn by its reputation from the greatest universities of England, France and Germany, as well as from the leading schools and colleges throughout this union. It is not merely that its teaching staff has expanded so that it contains today more than two hundred and fifty men, and that amongst its hundred professors are to be found many men of prominence, and not a few of national and indeed international reputation. It is not merely that amongst its graduates there are men of the front rank as pioneers of knowledge in the field of pure science, nor that its ten thousand alumni have played so great a part in the development of the nation's industry and commerce, and in the preservation of the public health. The most striking fact, when one considers the Institute's youth, is the fact emphasized on an earlier anniversary by Mr. Augustus Lowell and expressed by him in the phrase, "The M. I. T. is *preëminently a leader in education.*" Its educational ideals and methods have been studied and almost everywhere the trend today is in the direction in which the Institute has long been moving.

Following the President's address came a paper by Dr. William H. Walker, director of the research laboratory of applied chemistry, on "The Spirit of Alchemy in Modern Industry." The last paper of the afternoon was on "Technology and the Public Health" by Prof. C.-E. A. Winslow, '98, associate professor of biology, College of the City of New York, and curator of public health, American Museum of Natural History, New York.

The papers delivered on Tuesday, the second day of the Congress, were divided into five sections: Section A,—Scientific Investigation and Control of Industrial Processes, under the direction of Prof. Wm. H. Walker, chairman; Section B,—Technological Education in Its Relations to Industrial Development, in charge of Dr. Arthur A. Noyes, chairman; Section C,—Administration and Management, in charge of Dr. Davis R. Dewey, chairman; Section D,—Recent Industrial Development, in charge of Prof. D. C. Jackson, chairman; Section E,—Public Health and Sanitation, in charge of Prof. William T. Sedgwick, chairman; Section F,—Architecture, in charge of Prof. F. W. Chandler, chairman.

Prof. Charles F. Park was in general charge of the Congress.

CLASS DINNERS

Although the suggestion that the classes meet together for dinner was made

Eben Stevens and Col. Russell of the Class of '68.—*Boston Herald*

at the last moment, nearly every class from the beginning of the '80's up to the present time met together for dinner, and the hotels all along Boylston Street were crowded to their fullest capacity with jovial throngs of Tech men getting their voices in tune for the smoker in Symphony Hall. Very few classes made any special arrangements for dinners or met in private rooms. As the celebration came on Monday evening when the patron-

age at the hotels is lightest and there was ample room everywhere and plenty of time for an *à la carte* dinner. At eight o'clock the throngs began to pour out of the hotels and march up Boylston Street in numbers far outstripping any social event the alumni have ever held.

THE ANNIVERSARY SMOKER

The attendance at the smoker on April 10th exceeded that of any similar function ever held in Symphony Hall. There were more than twelve hundred Technology men on the floor, while the balconies were crowded with friends of alumni and undergraduates of the Institute. After overselling the floor by over one hundred it was thought not wise to admit a larger number and about two hundred men were unable to secure floor tickets.

George B. Glidden, '93, who ran off the Smoker so successfully

The program of the evening was in charge of a committee of which George B. Glidden, '93, was chairman. His promise that the entertainment would be unusual, interesting and mirthful was fully carried out. The committee on decoration of which Prof. H. W. Gardner, '94, was chairman, beautified the hall with banners, palms and flowers and the Waltham Watch Company Band played popular airs.

The crowds began to throng in long before eight o'clock and about that hour delegations from various Technology clubs throughout the country began to arrive carrying the banners of their local associations.

Among those that sent delegations were—Chicago, Rochester, Schenectady, Pittsburg, Washington, New York, New Bedford, Providence, Merrimack Valley, Springfield, Hartford and Philadelphia; although nearly every other club east of the Rockies was represented including—Minneapolis, Denver, Detroit, and Buffalo.

As these delegations entered the hall they were greeted by ringing cheers from the multitude, the climax coming when the old class of '68 entered with Eben Stevens at the head.

In the meanwhile the program was going on and when the stage was not occupied, the men either cheered, or sang Technology songs. The crowd was too great to allow much moving about. The first number on the program was the singing of "Dear Old M. I. T." by the combined musical clubs of the Institute. J. C. Fuller, '11, and F. C. Thompson, '11, presented a song and dance number which was a part of the "Chocolate Soldiers" minstrel performance given last winter.

Then the band played again and the New Bedford Technology Club, thirty strong, marched into the hall headed by a Scotch piper, each man wearing a head piece made to resemble a whale. The whalers made a great hit and were compelled to march up and down the hall to show off their equipment.

H. E. Kebbon, '12, sang a parody on a popular song, written by Dudley Clapp, '10, in which he described Tech's search for a new home and the Springfield Alumni's offer of a site for the Institute, as follows—

Tune: Any Little Girl that's a Nice Little Girl, etc.

The Stute you know can never grow while it remains right here,
Of those who long to join our throng they flunk out more each year;
This seemed to vex our honored Prex when to this place he came,
He said "No doubt we must move out" and then he did exclaim

CHORUS

Any little site that's a nice little site is the right little site for me,—
We want a place to go with a lecture room or so and a lab for chemistry!
With the Union lunch where we can munch and the chapel, yes siree,—
For any little site that's a nice little site is the right little site for me.

It came to pass, at Springfield, Mass., they heard his tale of woe,
Said they "You'll get the one best bet if to our town you'll go!
We'll give you ground stretched all around and full three million bones,"—
Prex shook his head and then he said in most decided tones

CHORUS

Any little site that's a nice little site is the right little site for me,
Some modest little spot, say a thousand-acre lot, and of course I want it free,
With some pleasant hills and babbling rills, and in Boston it must be,
So any little site that's a nice little site is the right little site for me.

O. B. Denison, '11, sang his celebrated ballad with "hand-made" illustrations, entitled "The Old Mill Wheel is Turning in the Belfry," which took down the house. He then did some piano stunts, playing blindfolded, playing while the keys were covered with a sheet, and finally while standing on his head still blindfolded.

Following this was a three-round sparring bout between two well-matched undergraduates, with Major Briggs as referee.

At intervals during this program the hall was darkened and pictures recalling the old days of Technology were thrown on the screen. These had been collected by Chairman Locke and his committee consisting of Prof. Allan W. Rowe, '01, and Grosvenor Marcy, '05. Each one of them brought forth applause from some portion of the house where the special features were recognized.

Among these pictures were photographs of well-known professors showing how they appeared when they first came to the Institute as students and as they look today. The pictures taken from old "Techniques" representing in the main, grinds on the faculty were received with uproarious applause in which many of the victims joined heartily.

The moving pictures of *Technique* rush were kindly loaned by the management of Keith's Bijou Dream, also the slides and moving pictures of the Technology reunion in 1909.

How the Undergraduate Entertainers looked to the *Herald* Artist

Two excellent numbers by the Technology Orchestra of about seventy-five pieces followed. The combined Glee and Mandolin clubs then rendered "Our Technology."

THE ANNIVERSARY BANQUET

The culminating event of the semi-centennial celebration was the great banquet in Symphony Hall on April 11th which was attended by about eight hundred alumni and friends of the Institute.

The stage on which the speakers' table was set was arranged to represent a classical garden, the background being formed of a mass of bay trees relieved by Corinthian columns which were surmounted by large vases containing great bunches of red roses. The central feature was a bust of Professor Rogers in front of a panelled background of gold. At each medallion along the front of the first balcony were garlands of flowers and masses of green leaves, while ropes and festoons of green stretched from medallion to medallion.

The tables on the floor which completely filled the available space, were strewn with cut flowers, and the cardinal shades of the candlesticks gave a touch of color to the snowy tables. Above the stage was an immense banner of Technology and on either side in electric lights the first and latest graduating years, '68 and '10. The flowers on the head table were massed in low relief and flowering plants banked the narrow space between the front of the stage and the tables. At the head table were three immense gold candelabra, while on the floor tables the candelabra were of the same design, but of silver.

C. C. Peirce, '86, the genius of the great Banquet

After the banqueters had entered the hall and were standing at their places, Major Frank Briggs '81, led a long cheer, after which the band struck up the chorus of "Auld Lang Syne," in which every one joined.

Perhaps the most remarkable feature of the banquet, from an engineering standpoint, was the dinner itself which was in charge of a committee of which C. C. Peirce, '86, was chairman, and which was prepared and served under the direction of Mr. Joseph Sheehan, steward of the Eastern Yacht Club and the Brookline Country Club. The mystery of it all was how the food could be cooked to perfection and served hot in Symphony Hall where there are absolutely no facilities for such work.

As with the food, so the service was perfect, the waiters being drafted from the principal clubs in Boston. Experienced head waiters took charge of divisons, so that every detail of the banquet was carried out with the precision of clock work.

Throughout the whole dinner there was a superb display of spirit for which Tech has become noted in recent years and which marked the whole celebration of the anniversary.

The men were seated by classes and during the dinner class yells and cheers for prominent professors and alumni followed each other in quick succession.

At the head table were seated President Maclaurin, Lieutenant-Governor Froth-

ingham, Pres. A. Lawrence Lowell of Harvard, a member of the Institute Corporation, Dr. Chas. W. Eliot and Prof. George A. Osborne, of the original Faculty of the Institute, Prof. Arthur A. Noyes, president of the Alumni Association, Col. E. D. Maier, president of the American Society of Mechanical Engineers, Admiral Mordecai T. Endicott, president of the American Society of Civil Engineers, Prof. James M. Crafts, former president of the Institute, George S. Smith, president of the Chamber of Commerce, Charles A. Coffin, president of the General Electric Company, Prof. Wm. T. Sedgwick, representing the Faculty, Clarence W. Barron of the Boston News Bureau, Frank B. Tracey of the *Boston Transcript*, L. Lincoln Wilcutt representing the original petitioners to the legislature, Messrs. James P. Monroe, George Wigglesworth, James W. Rollins, Jr., Francis R. Hart, J. M. Longyear and Frederick P. Fish representing the Institute Corporation and Mr. William Endicott, Jr., representing his father who for many years was treasurer of the Institute and a member of the Corporation.

After coffee the audience arose and sang the Stein Song, and after a long cheer President Maclaurin made the following introductory address:

PRESIDENT MACLAURIN MAKES ANNOUNCEMENTS

This is an occasion primarily for congratulation to all who have been concerned in the great achievements of the Institute since it was chartered fifty years ago. Beginning in a small and humble way it has made itself a power, so that there is scarcely a portion of the world where its influence is not felt. A retrospective mood would seem appropriate to such an occasion and I hope that some of the speakers will tell us of the struggles of the earlier days and of the wisdom and the courage of those who prepared the ground for the harvest that we are reaping. We owe much to those pioneers and we are unstinted in our feeling of respect and gratitude for their achievements. But after all, when you consider what the Institute has done and the great influence that it has exerted, the most striking thing about it is its youth. And youth naturally looks forward rather than backward. So, even tonight, we are thinking mainly of the New Technology, wherein, under freer conditions we can retain all that is best in the spirit of the good *old* M. I. T. In planning for this *New* Technology, we have at least two great advantages over our original founder, Rogers. In the first place, the value of such an institution can no longer be the subject of debate. It is proved beyond dispute. The need of technically trained men in almost every walk of practical life, is becoming daily more apparent, and no far-seeing man doubts that the need and the demand will be stronger in the next generation than it is today. So while the Old Technology was backed by a few men of exceptional foresight, the New Technology has behind it the irresistible force of public approbation. Further than this, we have the inestimable advantage of the loyal and enthusiastic support of a strong body of alumni. They can and will help the institution in a thousand different ways. Time will not permit me to give you more than a few examples of what they are actually doing today, but two or three I feel constrained to mention.

It has been recognized for some time that there are certain branches of engineering that cannot be properly taught in the heart of a great city, and that a summer camp is a necessary adjunct to a fully equipped school of civil engineering. This camp must be about a thousand acres in area, varied in contour and close to sea, lake and river. It is not easy to find such a place that is available, but an alumnus of the Institute has not only found it after very careful search, but has bought it. He now offers it to the Institute, and stands ready to equip it later if his offer be accepted. This alumnus wishes to remain anonymous and of course his wishes must be respected. I may perhaps say, however, that he is a member of the great class of '93. This generous offer will be considered by the Corporation at its next meeting.

At that meeting there will be other offers to consider. One of the most active

alumni associations is the Northwestern with its headquarters in Chicago. At a meeting there recently to discuss what should be done when the site problem is settled, it was suggested that Chicago should *act*, while Boston and Massachusetts *pondered;* and so another member of the class of '93, president of the Universal Portland Cement Company, announced that he would supply freely all the cement needed in the construction of the new buildings. That is an extremely generous offer, which the Cor-

Edward M. Hagar, '93, who will donate the cement used in the new buildings

poration will doubtless accept with alacrity, especially when it realizes the possibility of building the whole Institute in reinforced concrete.

Now, as to the site problem, after all, there are limitations even to Portland cement, if you have no land on which to found your buildings, and so the question of a suitable site has been a matter of careful investigation for some time. To many, the problem seems very simple indeed. If we may judge from the offers that have been made with regard to this matter, the state of Massachusetts consists almost wholly of sites that are perfectly ideal for the purposes of this Institute. Most of these offers have been of a business character, requiring a not inconsiderable monetary consideration, but there have been exceptions, notably in the case of Springfield. There, a site is freely offered that is splendid in nearly all respects save one—it is not near enough to the Hub. I think that His Honor, the Mayor, will agree that Boston is today even as it was in Rogers' time, the ideal place for such an institution. However, even the most ideal site in the great city of Boston is not very interesting to us unless we have the money to buy it. And we have none that we can use for such a purpose. When describing the situation to a committee of the legislature I said that I knew something of the temper of the alumni, and something also of the attitude of public-spirited citizens, who, although not alumni, believe heartily in the Institute, I added, that knowing this, I felt confident that enough money could be raised during the next decade to provide a new site and new buildings, *provided* that the State would help the Institute over the difficult period of transition by undertaking a larger share of the burden of the running expenses than it has borne in the past. Since then, I observe that the House Committee of Ways and Means has proposed to make the continuance of State aid conditional on the raising of a million dollars. I have therefore been trying the strength of the forces behind me.

I have not received promises of the million yet, but I have received absolute assurances from certain of the alumni that they will contribute a very substantial proportion of the sum needed to purchase a suitable site, if only the State will take care of that part of the running expenses not already provided for. Prominent amongst these generous friends are alumni from outside the State of Massachusetts. As an example of the spirit of the conditions that they attach to their promises of support I may say that one of these alumni expresses himself in effect as follows:—"I have no connection with Massachusetts except the ties of my association with the Institute. But, although I am not a Massa-

chusetts man, I am and always will be a Tech man. I know its needs, I see something of its possibilities, and I realize that it ought to move and to give itself room for free and natural growth. I will help on these conditions:—*First:* that a site be secured that in location and size satisfies my ideas as to the future development of the Institute—(and I may add that his ideas are large in proportion to his generosity).

Second: that other friends of the Institute provide funds to complete the purchase of such a site and to erect thereon suitable buildings.

Third: and most important of all, that during the transition, the educational standards of the Institute be maintained at their present high level.

The Institute holds its present proud position by maintaining the highest standards and we can permit nothing to lower them. To maintain these standards, the running expenses must be met and any one can see that the load of millions that this rebuilding will impose upon our friends will tend to divert funds that would otherwise be given for current expenditure. If, then, we are to take advantage of the generous offers to which I have referred and are to launch out on a policy of development the only alternative to increased state aid during the period of transition is an increase of fees. This increase we hesitate to make, as our fees are relatively high already and any addition would exclude a large number of the sons of wage-earners—a class that supplies one third of our students and many of the very best that we have. If, on the other hand, the legislature as a whole, acts in accordance with the resolutions of the Senate and in accordance with recommendations of the Committee on Education and on Ways and Means, all of which after most careful investigation, have approved the granting of this state aid, then we shall certainly go ahead immediately.

As to the site itself, I may say that if my judgment be worth anything, the problem of selection is practically solved. It is reduced to the simple problem of selecting one out of three sites. It can only be solved definitely when we are in a position to get down to actual business and make a definite offer. Then, and then only shall we know exactly where we are in the important matter of price—an element that must be a factor and that may easily be a determining factor in making the selection. I need only add that all three sites are within easy distance of Rogers' steps.

So much of alumni support; but the interest in Tech is certainly not confined to the alumni. Our campaign for increased state aid had brought us evidence of good-will from unexpected quarters everywhere and proved beyond dispute that there is a tremendous force of public sentiment behind the Institute of Technology. And need I remind you that, apart from the public at large, there is at least one who cares for the Tech that Rogers founded with a devotion that no alumnus can ever match. As the latest proof of her constant thoughtfulness, I may mention that Mrs. Rogers asked yesterday to have the privilege of subscribing $500 towards the expenses of the Congress of Technology.

Louis K. Rourke, '95, then read telegrams from various associations to their Alma Mater as follows:

OAKLAND, CAL., April 11.

PRESIDENT MACLAURIN, Technology Banquet, Symphony Hall.

Technology the foremost among schools has for fifty years been the leader. May she long continue to be so.

TECHNOLOGY ASSOCIATION OF NORTHERN CALIFORNIA, SAN FRANCISCO.

PHILADELPHIA, PA., April 11.

PRESIDENT MACLAURIN, Symphony Hall, Boston.

Greetings from the Technology Club of Philadelphia.

W. H. BLAKEMAN, *Secretary.*

NEW YORK, N. Y., April 11, 1911.

DR. RICHARD C. MACLAURIN, Technology Banquet.

Technology men of New York sing good old Tech songs, join with Boston in the celebration. Direct wire great success.

WILLIAM H. KING, *President.*

BUFFALO, N. Y., April 11.

RICHARD C. MACLAURIN, Symphony Hall.

Buffalo assures Technology Congress its unfailing loyalty to the Institute, and hearty coöperation in future plans.

W. H. WATKINS, *President.*

BUFFALO, N. Y., April 11.
RICHARD C. MACLAURIN, Mass. Inst. of Tech, Boston.
We glory in the Institute's past, yet may her progress be so great that future celebrations will date from her golden jubilee.
BUFFALO.

CHICAGO, ILL., April 11.
FREDERICK K. COPELAND,
DR. RICHARD MACLAURIN, Mass. Inst. of Tech, Boston.
Assembled seventy-five strong and send to you the greetings of all the fellows. Tell them there we are with them heart and soul.
MEYER J. STURM, *Secretary.*

CHICAGO, ILL., April 11.
DR. RICHARD MACLAURIN, Boston.
The fact that we lead and others follow has been largely due to our leaders. The Northwestern Association sends to you as commander in chief, the assurance of its continued and loyal support at all times and upon all occasions.
MEYER J. STURM, *Secretary.*

CINCINNATI, April 11.
DR. RICHARD MACLAURIN, M. I. T.
May the new Technology of the second half century be a grand fulfillment of all the dreams of the old.
THE CINCINNATI M. I. T. CLUB.

CLEVELAND, OHIO, April 11.
R. C. MACLAURIN, President M. I. T.
The Technology Club of Northern Ohio, in behalf of one hundred and fifty loyal alumni, sends hearty congratulations upon your fiftieth anniversary. Here's a million in good wishes for Technology, and every one of her birthday dinner guests.
SIDNEY Y. BALL, *Secretary.*

DENVER, COL., April 11.
DR. RICHARD C. MACLAURIN, Mass. Inst. of Tech., Boston.
Rocky Mountain Technology Club one mile high sends greetings with best wishes for successful anniversary.
FRANK E. SHEPARD, *President.*

HARTFORD, CT., April 11.
PRESIDENT RICHARD C. MACLAURIN, Mass. Inst. of Technology, Boston.
From a few of us here to all the rest; A health to Tech, past, present and future!
HARTFORD TECHNOLOGY CLUB.

LOS ANGELES, CALIF., April 10.
DR. RICHARD C. MACLAURIN, Mass. Inst. of Tech., Boston.
The Technology Club of Southern California sends greetings from the Golden State to the Massachusetts Institute of Technology on the occasion of its golden celebration.
We are sorry you live so far away.
TECHNOLOGY CLUB OF SO. CALIF.,
JAMES W. JOHNSON, *President.*

LAWRENCE, MASS.
PRES'T MACLAURIN M. I. T.
We send greetings to the brothers of our Alma Mater and we pledge our allegiance for all time.
TECHNOLOGY CLUB OF THE MERRIMACK VALLEY,
BY JOHN A. COLLINS, JR., *Secretary.*

MINNEAPOLIS, MINN., April 11.
PRES'T MACLAURIN, M. I. T.
Greetings from Technology from Tech Club of Minnesota. May the success of the past be an inspiration for the new efforts of the future.
J. W. SHERMAN, *Secretary.*

NEW YORK, April 11.
RICHARD C. MACLAURIN, Technology Banquet, Symphony Hall.
Hurrah for site, Class of '93, Universal cement, and Chicago Edison!
NEW YORK CLUB.

NEW YORK, April 11.
DR. RICHARD C. MACLAURIN, M. I. T.
The Technology Club of New York sends you this greeting of congratulation, confidence and esteem, rejoicing in the high service heretofore rendered by the Institute, in its present efficiency, and in the promise of the greater achievements of the new Technology under your wise guidance.
WILLIAM H. KING, *President.*

PITTSBURG, PA.
RICHARD C. MACLAURIN, President M. I. T.
Pittsburg Association extends greetings on the fiftieth birthday of Institute. May next fifty years' history surpass our fondest expectations. Tech owns Pittsburg tonight.
L. K. YODER, *Secretary-Treasurer.*

PORTLAND, OREGON, April 11.
PRES'T MACLAURIN, Mass. Inst. of Tech, Boston.
Oregon Alumni send greetings and best wishes for the future.
A. G. LABBÉ, *Secretary.*

PROVIDENCE, R. I., April 11.
RICHARD MACLAURIN, Pres't, Symphony Hall, Boston.
Members of the Technology Club of Rhode Island, unable to attend the golden anniversary exercises, have assembled at the University Club and send greetings to President Maclaurin, the alumni and guests of Technology. The heartfelt wish of all present is that the Institute may continue in the front rank of educational institutions and increase its prestige and influence as the years pass.
E. D. PINGREE.

SEATTLE, WASH., April 10.
PRESIDENT MACLAURIN, Mass. Inst. Technology, Boston, Mass.
Technology Club of Puget Sound sends greetings and congratulations to Tech, to you and to all Tech men assembled. Regret we cannot all be there. We are with you in thought and spirit.
FRANK DABNEY, *President.*
L. ARTHUR WALLON, *Secretary.*

SPOKANE, WASH., April 11.
PRES'T MACLAURIN, M. I. T.
Here's to William Barton Rogers and his Tech! We're spreading his ideas way out here.
P. F. KENNEDY, *Secretary.*

SPRINGFIELD, April 11.
R. C. MACLAURIN, Boston.
Gilt-edge Springfield site all ready.
Will be delivered, all charges prepaid. Wire acceptance our expense.
CONNECTICUT VALLEY ASSOCIATION.

SPRINGFIELD, MASS., April 11.
PRESIDENT RICHARD C. MACLAURIN.
Dinna forget that we're not so far distant from Boston but that the echoes of your celebration can easily reach Springfield and the Technology Club of the Connecticut Valley,
E. P. MARSH, *Secretary.*

HARRISBURG, PA., April 11.
RICHARD C. MACLAURIN, Symphony Hall, Boston.
Tech's sons in Central Pennsylvania send greetings to Alma Mater.
STEPHEN BADLAM, *Secretary.*

SYRACUSE, N. Y., April 10.
DR. R. C. MACLAURIN, President Mass. Inst. of Technology, Boston.
The M. I. T. Club of Central New York holds banquet at Syracuse as all good Tech men should. Though in numbers we are small our enthusiasm and loyalty are large and we extend our heartiest congratulations to our Alma Mater on completion of her half century.
JAMES P. BARNES,
President M. I. T. Club of Central N. Y.

WASHINGTON, D. C., April 10.
PRESIDENT RICHARD C. MACLAURIN, Mass. Inst. of Tech., Boston.
Loyal sons of Technology in Washington, D. C. send greetings and congratulations.
R. B. SOSMAN, *President.*

PROVIDENCE, R. I., April 11.
RICHARD MACLAURIN, Pres't Mass. Inst. of Tech, Boston.
Greetings to Tech, on this her golden anniversary. May the star of her superiority continue in its ascendency full fifty times fifty years more.
TECHNOLOGY CLUB OF RHODE ISLAND.

ROCHESTER, N. Y., April 11.
DR. R. C. MACLAURIN, Pres. M. I. T.
With sincere congratulations the Technology Club of Rochester sends its greetings to Doctor Maclaurin.
W. E. HOYT, *President.*

ST. LOUIS, MO., April 11.
RICHARD C. MACLAURIN, M. I. T.
O Alma Mater, 'tis to thee, a group of loyal and devoted sons are raising a song of glory in St. Louis to-night!
A. M. HOLCOMBE, *Secretary.*

In introducing Governor Frothingham, President Maclaurin said:—"The Institute of Technology is proud of its connection with the State. It has received also from these distinguished men who have occupied the great offices of Governor and Lieutenant-Governor of this Commonwealth, assistance and help at many a critical period of its history. It owes a great deal to the help at the outset of the great war Governor, Andrew, who did far more than sign its charter, who took a real and warm interest in its development and always expressed the hope that it would move forward on broad lines and lay its plans for the future,—the long distant future of the Commonwealth,—and the State is represented on the Corporation by the Governor of the Commonwealth as well as by other representatives. We had hoped tonight that his Excellency the Governor would be with us, and he was to be here, but unfortunately during the day he was taken suddenly ill—we hope only temporarily, and is thus unable to be present. We are fortunate that we have with us his substitute, the distinguished Lieutenant-Governor, whom I have the pleasure to present to you now."

LIEUTENANT-GOVERNOR FROTHINGHAM

Lieutenant-Governor Frothingham said that he owed a great deal to the Institute of Technology because when he was an undergraduate at Harvard, and captain of the nine in his junior year, Harvard received from the Institute the best batter that ever stood on an amateur diamond. Mr. Frothingham ascribed his particular skill to the fact that he was probably coached by Major Briggs. The speaker paid a fine tribute to the Institute for what it has done for the State and the whole country and said, "If the present Governor of Massachusetts is in any doubt as to whether he will affix his signature to the measure which is at present before the legislature, the mayor of Boston and I have agreed to advise him, and advise him correctly on that subject." Mr. Frothingham then enumerated a number of examples of engineering and scientific work where the men of Technology had

accomplished unusual results for the benefit of the State. He spoke of Howard Carson's work as head of the Rapid Transit Commission, of the service that Professor Sedgwick has rendered the State in improving its sanitary conditions, of the fundamental work that Tech men and women have done for the Metropolitan Water System and the engineering work on the Charles River Basin, and in connection with the latter, referred to John R. Freeman and James W. Rollins, Jr. He also spoke in high praise of the value of the services of Prof. George F. Swain. "But the Institute has done more for Massachusetts and the country," said Mr. Frothingham, "for there a preliminary training was given to the two great presidents of Harvard University who sit at this table this evening. A man once approaching the shores of New England and viewing the rock and barren soil, asked his neighbor what could be produced on such a soil, and the answer came back, quick as a flash,—'We can produce men,' and it is that which the Institute of Technology has proved in this state, where a scientific knowledge is so necessary. It is to the brains that come out of the Institute of Technology that we owe our success in manufacturing in New England."

The toastmaster spoke of the close connection between the Institute and the City of Boston and introduced its mayor, Mr. John F. Fitzgerald.

MAYOR FITZGERALD

Mr. Fitzgerald said:—"I heartily subscribe to the sentiment uttered by the Lieutenant-Governor of the Commonwealth when he said that His Honor the Mayor of Boston and himself, associated with the Governor of the State in the management of affairs of the Commonwealth, would do everything in their power to induce him to attach his signature to what I believe will be the action of the House in concurrence with the Senate in appropriating $100,000 for ten years for the Massachusetts Institute of Technology, and I think I am violating no confidence tonight in giving expression to my appreciation of what this splendid institution has done in the past and what such an appropriation means in the future, when I say that I think His Excellency, the Governor, will agree with the Lieutenant-Governor and myself, that it is the proper thing for him to do and the thing that the people of the Commonwealth expect him to do." The mayor spoke of the close association between the history of the Institute and the development of New England and of the high standing of Technology in pure science as shown by Professor Cattell's report. "A moment ago," said Mr. Fitzgerald, "the Lieutenant-Governor was pleased to recite the names of men who have distinguished themselves in the engineering line. A moment ago congratulations to the President were read by the superintendent of streets (Louis K. Rourke, '95) of Boston,—I found him down in Panama less than a year ago. The President of the United States told me when I took him from Panama that I carried off his best man in civil life and that it was due to his training, skill and ability that such progress had been attained by the United States in the work on the Culebra Cut. Boston was honored for more than thirty-five years by the occupancy of William Jackson, '68, in the chief place in its engineering department. Although Mr. Jackson was not graduated at the Institute, he was one of the earliest students; a man who conferred great honor on this institution and upon the City of Boston, not only by the work which he did, but by the interest he showed in the Institute."

In presenting Mr. Charles A. Coffin, of the General Electric Company, Dr. Maclaurin referred to the fact that the electrical industry is scarcely older than the Institute of Technology and, like the Institute, it owes its existence and development to the scientific spirit.

MR. CHARLES A. COFFIN

Mr. Coffin said that in all ages of the world we have had commercial sagacity and aggregation of capital. Crœsus was a man of means but he did nothing for the uplift of mankind. "All through the years," said Mr. Coffin, "there has been a dead level of history so far as industrial

work and industrial progress are concerned, until there arose institutions dedicated to the extraordinary work which this Institute has so successfully dedicated itself. I think of this and like institutions as a great source of high speed, of intelligent endeavor, of high purpose, and of devoted consecration, and of you as an outflow carrying to all parts of the earth your genial and fertilizing influence." Mr. Coffin then spoke briefly of the vast field of human effort into which Technology men have drifted, of their success in attacking the problem of sanitation, of electrical, mechanical, civil and mining engineering, chemistry and transportation. "In transportation what do we see? The immigrant of the old world carried a thousand miles to a place in the West generally in comfort and luxury, and I have seen it estimated that this is accomplished for ninety-five per cent less than it would cost him to walk that distance and furnish his own supplies." While speaking of the matter of transportation, Mr. Coffin said,—"I cannot refrain from doing honor to the man who I had hoped to see here tonight, and who has done perhaps more than all other men together to contribute to public security and comfort while traveling,—I refer to Mr. George Westinghouse." Mr. Coffin said that he had been fortunate in being supported by men of scientific training,—men from the Institute to whom he felt he owed a great deal. He referred to the success of a number of Technology men in their various fields of work, particularly in the field of electrical engineering. In closing, Mr. Coffin characterized the work of the Institute men as follows:—"Your work, your thought, your ideals and your achievements; that which you are and that which you do, is the aristocracy of achievement in the great republic of equal opportunity."

PRESIDENT LOWELL

Prof. A. Lawrence Lowell, president of Harvard University, next spoke, and said in part:

As one approaches a medieval city in Europe the first thing that catches one's sight and the most interesting thing in the city is a great cathedral. I believe that it is not altogether fanciful to draw a parallel between a Gothic cathedral and an educational institution of modern times. A Gothic cathedral was built by two forces—a civic pride and an ideal of universal value.

Moreover a Gothic cathedral strikes one with awe at the faith and the devotion and efficiency of the people who built it. The Massachusetts Institute of Technology is the result of the faith of Professor Rogers, who believed that the working out of the great industrial problem of modern times could be made a learned profession and that men could be trained for that profession in a school.

At the time he had this faith there was no model in the country to which he could point for the success of that idea and he had no resources with which to start to fill it. Moreover the country was just engaging in the most terrible war that it had ever known, but his faith was absolute and he accomplished his results.

Now the devotion—and no man can have mixed for years with the professors of any institution of learning without feeling that the professors are the most devoted men that exist anywhere—their devotion to their work is far above their pay and it is given with a feeling of the results that they can accomplish for the unseen future, and among the professors of all institutions there are none who are more loyal to their institution and more devoted to their work than the professors of the Institute of Technology.

I happen to find among my grandfather's letters one of which I will read you a few words. This is dated in October, 1865. It says: "I propose to introduce a course of evening instruction to be given gratuitously to the public under such regulations as may be deemed advisable. It has occurred to me that this course might with advantage be delivered in the first instance in strengthening the Massachusetts Institute of Technology and by its professors. If such an arrangement will be acceptable to the government, I shall be happy to confer with you

on the subject. Yours respectfully, John Henry Lowell, trustee of the Lowell Institute."

These courses were immediately instituted and among the professors who taught in the first year was one who was afterwards president—Runkle—of the Institute, and another was President Eliot of Harvard University. (Applause.) Those courses have continued from that day to this, 46 years, except that eight years ago their nature was somewhat changed and they were turned into the school for industrial education.

No one can have watched the teaching of those men without feeling their devotion to their work. They have put into it the same energy that they put into the regular instruction of the students, and I will not say they have done it without sufficient pay, because there might be a claim for increase in that direction (laughter), but they have certainly done it with a devotion which it is a joy to watch.

President Lowell then spoke of the efficiency of the Institute and said that it has always known exactly the result it wished to accomplish, exactly the kind of young man that it wished to turn out and exactly the education that they wished to give. Secondly, it had always maintained a fixed high standard. It had never in any way catered to numbers by making its course more easy or by making it more cheap. In fact, it could be said that the Institute might write over its door: "Leave all leisure behind, ye who enter here."

Mr. Lowell said in concluding: "An institution of learning not only is never finished, but it never grows old. To the eyes of its lovers it never ceases to be fair, and the lovers of the Institute of Technology look forward in the next 50 years to a future which is as incalculable as the present condition would be to Professor Rogers if he could return and see this gathering here tonight."

DR. CHARLES W. ELIOT

I was in at the beginning of the Institute. I attended a meeting by the invitation of Governor Andrew at his own house very early in the year 1861. It was a meeting which Governor Andrew had himself brought together of moneyed men and teachers, and particularly some of the leaders in the educational institutions already firmly established in Massachusetts, and the desire of the Governor which he stated before the meeting very frankly at its opening, was that the newly chartered Institute of Technology should be united with the Lawrence Scientific School and Bussey Institution and that this combination should rally to its support all the educational forces and moneyed forces of Boston and its vicinity.

Mr. Rogers was present at this meeting. So was the then president of Harvard University; so was the president of the Lowell Institute, and nothing could exceed the skill and the good temper with which President Rogers met this proposition of Governor Andrew.

It did not commend itself to his judgment, but he met it with the utmost tact and skill, and good feeling, and at that meeting Governor Andrew gave up the idea of combining these forces. That was the very first year of the Institute, the year of its charter.

President Lowell has said that the success of President Rogers indicated the strength of that tremendous motive which we call faith. The resources of the Institute at the start came wholly from private persons. Mr. Rogers himself, the solicitor, the expounder of the purposes of the Institute, was a private citizen without official position. He was not even a native of Massachusetts; he had not been brought up here. As an example of his faith President Lowell spoke of this whole period, the birthtime of the Institute, as a period of tremendous commotion and of enormous risks for all the business people of the country. It was indeed a period of terrible anxieties.

The first actual money responsibilities towards other people that President Rogers took was when he engaged his first Faculty, when he undertook to pay about ten men annual salaries, and he undertook that when there were no adequate resources in sight. Now when did

I receive the invitation to become on the first of the next September a professor in the Institute of Technology with a salary of $2000 a year? It was two weeks after the assassination of Lincoln and Mr. Rogers had written that letter which put him under obligation, within a few days of the assassination of Lincoln. Faith, indeed, confidence in the public spirit of Boston and Massachusetts, confidence that he had already engaged the attention of the people of the state and particularly of numerous men capable of supporting his undertaking. I see in this publication (alluding to a copy of *Advance New England*) a portrait of President Rogers. It makes him look grim,—his face was thin, skin and bone, and the lines in it were deep as shown in this picture, but his face was capable of bright illumination and a cordial smile and very winning expression. His success was largely due to his social faculties. One of the places where he won the necessary pecuniary support for the starting of the Institute was the Thursday Evening Club of which he became president. I was a member of that club at that time. Nothing could exceed the skill, clearness, precision and grace with which he would expound a scientific topic to that club and illustrate it delightfully and interestingly. His personal force and his personal attraction came out whenever he addressed us on a scientific theme or on a theme concerning public welfare, and it came out in a way that always won him support and admiration.

The beginning of instruction at the Institute was very humble. When the first Faculty came together in September, 1865, it was in a hired room in a low building, of very shabby construction opposite Hovey's store on Summer Street. I recall very clearly that the first class assembled in those rooms numbered, if I remember rightly, twenty-three boys. They were what we would call a picked up lot, distinctly so. (Laughter.) But they had come there with a clear purpose. Some of them indeed had been persuaded by enterprising parents to join this novel school. There was no equipment; it was not possible to teach by any experimental method. It was as much as I could do to illustrate my lectures on chemistry.

No such thing as the student taking the experimental method was possible. We stayed there through all the first year; it was not until the next year that the Rogers Building was ready for us. President Rogers himself contrived the apparatus in the physical laboratory to enable the class to be taught in the experimental method then unknown as a means of teaching. Professor Storer and I had to do the same thing with regard to chemical teaching. Not only had we to find the laboratory and provide the materials, but we had to write a book before we could successfully bring into play in those laboratories the experimental method for every student.

Now, what does this extraordinary success starting from such small beginnings teach us for the future? What does it teach concerning the democratic possibilities in education? Private persons inaugurated and set going the whole of this movement toward technical instruction above the secondary school. It was not public force which did it; it was private forces, the diversion of private property to public uses and the movement was led by an educational pioneer, not a public servant. It illustrates the tremendous force in this republic of the method of endowment. That is what Harvard University illustrates also and has illustrated for some years. Now, you have been in possession for many years of a large grant from the state and you are confidently expecting a grant four times as large now. That again indicates the possibilities in education in the future of the Commonwealth and of the country in the combination of endowment with public resources. Harvard University had just the same thing exactly—from 1638 down to 1810, Massachusetts, the province, colony and state, steadily aiding the college, and in 1810 they made a similar grant to what you now ask from the Commonwealth. In 1810 the Legislature voted $10,000 a year from the tax on banks, to Harvard College for ten years. That for the day was more than the appropriation you

are now seeking from the much larger Commonwealth of Massachusetts. That gift ran from 1810 to 1820. Did it impair the independence of Harvard? Not at all. Did it commit the state to perpetual aid? Not at all. The Commonwealth has never given another grant to Harvard University; that was its last. You may have the same experience, gentlemen. (Laughter.) The Commonwealth may have the same experience again, but be not afraid of this combination of this method of endowment with the method of state aid.

Several speakers tonight have told you that the great asset of the Institute of Technology was its alumni body and they do not mean that it is the greatest of the pecuniary assets, although that may turn out to be true, too, in a little more time. That is true of the graduates of Harvard University, they are the greatest pecuniary asset of the University, but the graduates are always the chief asset of an institution of education in this respect;—they create its prestige; they give to the community confidence in the results of the education given in the institution. They strengthen it from every possible point of view and you are literally today the chief asset and support of the Institute of Technology. I have heard tonight many allusions to the field in which the graduates of this institution have distinguished themselves and will distinguish themselves. That field has been generally referred to or described as engineering or electricity or chemistry —some material field. I want to say one word on that subject because I think that conception of the service of graduates of technical schools is an incomplete one. I will illustrate what I hold to be the right doctrine by referring to some inscriptions on the front of the Union Station at Washington which I was invited to contribute to the adornment of that structure. An architect generally looks upon an inscription as nothing but a bit of decoration for a surface which would otherwise be plain. (Laughter.) Now, beside the architect there came to my house at North East Harbor three summers ago an artist with the then president of the Pennsylvania road, Mr. Cassatt, and they wanted me to write some appropriate inscriptions for some statues they meant to put on the front of that immense Union Station,—six statues in groups of two, and ninety feet above the pavement. When I asked the artist, Mr. Louis St. Gaudens, what those statues were to represent, I found that he was wholly at a loss to make a suggestion. When some of us suggested great explorers and travelers on the North American continent he rejected them all and finally said that he could not make any use of a personage who would inevitably be attired in a coat with large skirts, breeches and stockings—knee breeches and stockings. Now this was rather disappointing to me because I wanted to have some personages of the sixteenth and seventeenth centuries up there to write inscriptions about. (Laughter.) But he ended the matter by saying that no statue could be put up there with that costume. It would look just like an advertisement of Quaker Oats (laughter); therefore we had to have classical statues with flowing robes that went to the ground, no knee breeches and no stockings. (Laughter.) Now, what were the subjects of these statues? Well, the first was Fire, the greatest of all human inventions, the source today of all the mechanical powers. The next was Electricity, the great transmitter of mechanical power, and the two statues were Prometheus for Fire and Thales, the old Greek sage who first observed that if he rubbed a bit of amber with a bit of silk he could make pith balls fly away when suspended on a little thread. There was an original observation on electricity. It is a long way from that to wireless telegraphy but it is one road all the way. At the other end of the station front there was a statue of Ceres—Agriculture—which Mr. Coffin tells us, was the fundamental art. And next Archimedes, the Mechanic Arts, but what statues were to go between—between Fire and Electricity on one side and Agriculture and the Mechanic Arts on the other? These, you notice, are all mechanical, material forces, these four,

What were the other two? One was a statue of Imagination—not material—spiritual, inventive, discerning, seeing, imagining—the power of vision, the scientific imagination, root and instrument of all scientific discoveries, pure and applied. And the other? The representation of Freedom, liberty of thought, freedom for all mankind represented universally by the form of a woman.

Now, in all the work of the graduates of technical schools in our country these two great motives and powers should underlie and they are not material. They are spiritual. The human imagination is as much to be used in science as in poetry or the drama—a form of imagination as searching, as powerful as any other form of human imagination.

And above all the love of freedom, the purpose to promote in the world the freedom of the individual, the freedom in public action, in religious action, in every human interest, and the love of freedom, the greatest promoter of human welfare, and, therefore, gentlemen, the occupations to which you are devoted, to which your successors are to be devoted, are not to be thought of as materialistic only. They have their feet on the ground, but their heads are in the sky.

MR. GEORGE S. SMITH

Mr. George S. Smith, president of the Boston Chamber of Commerce, expressed the high respect and appreciation of the Chamber of Commerce for the great work done by the Institute of Technology and spoke of the intimate relation between Technology and the business world. "The business men of today," said the speaker, "are earnestly seeking those trained men upon whom they can place the responsibilities for efficient management of large affairs." In conclusion Mr. Smith said,—"I look to the splendidly trained men of the Institute of Technology to develop those powers and talents and many sides in the great world of commerce."

PROFESSOR W. T. SEDGWICK

I am reminded of a remark which President Eliot made some years ago in a Lowell lecture when in discussing the characteristics of technical and scientific schools, he pointed out one remarkable peculiarity in them, and that was the fact that even when connected with colleges and universities their students had not usually been expected to attend prayers. "Whether," he said, "this is because they are not supposed to need them, or because they are beyond hope, I have never been able to decide."

I think, however, that there was another reason, and the true reason, and that was because they were too insignificant. Beginning as simple protests against the monastic education of the time, they were, whether scientific or technical schools, at first considered of small account. They were badly housed; they were not at first hospitably received. But I mention these facts only in order to point out the contrast of today. From insignificance they have risen to vast importance; and the education which they exemplify has become the watchword of the time. Professional schools, whether of law or medicine, of technology or of any other sort, are characterized by the utmost devotion to their work of the students within their walls, and they stand today as the most satisfactory examples of modern education; the most easily dealt with, the least problematical that we possess. The Harvard Law School, without a peer among the law schools of the world, is noted for the intense application of its students. So also the Harvard Medical School and the Johns Hopkins Medical School, and it is the same with the Institute of Technology. (Applause.)

So wonderful has the success of such education become that the term "vocational" introduced as a kind of roundabout synonym for "professional" and "trade" schools, is the educational shibboleth of our time, and vocational education has become in the lower grades almost equivalent in popularity and in success to professional education in the higher grades. But what a change from 1861 to 1911! In that change several great factors have been at work.

First of all, the community, as has been so well said, has supported the effort, and to this community in which we so fortunately dwell let me return on this great occasion our heartfelt thanks. Secondly, our student body largely picked because of their originality, because of their restlessness under older methods of education, their readiness for hard work, their ability to concentrate. And then the teachers, the faculty, which has had so much to do with this work. I need not tell you how efficient the Institute was in the beginning with men like Rogers and Eliot and Storer and Ware and Watson and Osborn and all the others who formed that little original faculty. They set the example which we have ever since undertaken to follow, and which their successors between them and us of today have followed so successfully. We are all their debtors, as for instance in chemistry, —for were we not all students of "Eliot and Storer"? Most of those men are here no longer. Rogers and Runkle and Walker and Nichols and Norton and Holman and many more have gone to their reward; they rest from their labors but their works do follow them and they are enshrined in our affectionate remembrance and in that of every living Tech man.

Matthew Arnold, in one of his famous "Stanzas from the Grande Chartreuse," explains his want of sympathy with the monks by saying that

> . . . "rigorous teachers seized my youth
> And purged its faith and trimmed its fire,
> Showed me the high white star of truth,
> There bade me gaze and there aspire."

I suspect that the Institute has had many such "rigorous teachers." But on the other hand we proved long since that such is the spirit of our students that these shun the easier and prefer the harder courses, so that if any one is to blame for our "rigor" it is chiefly our students.

It is a great privilege to sit with the Institute Faculty. We hear of cliques in some institutions, and of factions in others. But I have been for almost twenty-eight years a member of the Institute Faculty and I can honestly say that I have never known a serious factional difference there. With the utmost independence of opinion, the utmost frankness of expression, and with absolute freedom of debate, the Institute Faculty is a very remarkable body. It comes as near a pure and enlightened democracy as anything I know. It is moved but not governed by tradition, and as in Japan there are "elder statesmen" who are listened to with respect, so in the Institute Faculty there are those who by their age or their experience are naturally somewhat more influential than the younger members; but still it is a wonderfully harmonious body, working to a common end, and coming as near the idea of "making reason and the will of God prevail" as any body with which I at least have ever been connected.

Finally, we have been fortunate also in the subject matter of our teaching—Nature and the laws of Nature—and in the object of our teaching, the amelioration of the lot of man upon this earth and here and now. Among the ancient Greeks the Eleusinian mysteries, celebrated on the shores of the beautiful Aegean, clustered about the physical universe and the worship of Nature. And of these mysteries Cicero tells us that those once initiated were enabled "not only to live happily but to die in a fairer hope." So may it be with us and with the Institute that we love; in our contact with Nature and our modern adoration of Nature, which we celebrate here on the shores of this colder northern sea by devotion to the truth and the philosophy of Nature, those of us who have been initiated, those who have learned Nature's secrets, may likewise be enabled not only to live happily but to die with a fairer hope.

Maps for Naval Architects

The department of Naval Architecture has received, at the suggestion of Congressman Peters, a complete set of U. S. Geodetic Survey maps showing the Atlantic coast. The series includes more than one hundred charts.

Dinner of Providence Association

The annual dinner of the Technology Club of Rhode Island was held at the Crown Hotel, Providence, R. I., Saturday evening, March 25th. About thirty-five members of the club were present. President Arthur A. Noyes, '86, of the Alumni Association, was the first speaker introduced by President Woolworth.

Dr. Noyes told about the plans that were being made for the New Technology and referred to the matter of aid from the state of Massachusetts as a question of the most vital interest to the Institute at the present time. He told about the organization of the committee on state aid and the great amount of work that had been accomplished to convince the Commonwealth of the profitable return the Institute makes to the State. The speaker alluded at some length to the Congress of Technology to be held in Boston, which he said was to make people realize the important position the Institute occupies with relation to the business interests of the world.

Lieutenant-Governor Bliss, '89, spoke in a pleasant vein of his life at Technology and of the changes for the better that have occurred since those days. He contrasted the social life of today with that of former years and stated that the various Technology clubs throughout the country were doing much to increase the loyalty to Alma Mater.

I. W. Litchfield, '85, of the REVIEW spoke of the increasing strength of the alumni organization and of the plans for work among the various Technology clubs throughout the country. He also outlined the social events connected with the Congress of Technology to be held in Boston.

The last speaker was John R. Freeman, '76, who gave an interesting address on the construction of the Panama Canal. Mr. Freeman made two trips to the Isthmus with President Taft as one of his advisers—bringing him into intimate personal relations with the President to whom he paid a high tribute. Mr. Freeman's talk covered not only the engineering features of the canal, but he described the entire organization of government in the canal zone.

The following officers were elected:—James G. Woolworth, '78, president; Charles F. Tillinghast, '78, vice-president; William C. Dart, '91, secretary-treasurer; Eleazer B. Homer, '85, member of Alumni Council. These with Louis D. Nisbit, '09, constitute the executive committee.

New Bedford Club at the Smoker—*Boston Herald*

Minneapolis Alumni Dine

At the annual dinner and business meeting of the Minnesota alumni of the Institute, held at the Minneapolis Club, Minneapolis, Minn., on April 11th, about thirty men were present. T. A. Foque '88, general mechanical superintendent of the "Soo Line" and president of the club, acted as toastmaster. Late news of the Institute, provided by the Committee on Local Associations, was read and addresses were made by some of the younger graduates who told about student life at the Institute at the present time.

The new officers elected were Henry Yoerg, '95, president; J. W. Shuman, '97, vice-president; Clifford C. Hield, '10, secretary, and M. C. Magnuson, '04, treasurer.

Electrical Research Work

Announcement has been recently made that the Boston Edison Company would give the Institute $3,000 for a period of years for the purpose of electrical research involving a thorough investigation of the use of electricity in vehicles employed in trucking or delivery. This investigation will also include certain economic features such as tires, street pavements, etc. The intention is to determine practically what the ordinary city with its limitations can do for tires, and what tires can do for it. All the elements of friction in the machine will be fully investigated and tests made of all the parts going into such electric vehicles. One important feature will be an investigation of the efficiency of a storage battery and the conditions under which it will best perform its work.

Papers by Dr. Comstock

At a meeting of the American Physical Society held in Washington, April 21, Dr. D. F. Comstock '04 read a paper on "The Physical Implications of the Principle of Relativity." He also read a paper before the American Philosophical Society in Philadelphia, April 22, on "The fundamental Principles of Modern Views of Matter and Electricity," and before a conference of teachers of the higher schools of Pensnylvania, April 22, on "The Modern Theory of Matter."

Freshmen-Sophomores Win over Harvard

The freshmen-sophomore track team scored a decisive victory over the Harvard under-classmen, May 8, at Technology Field. Technology had seventy-one points to its credit and Harvard forty-six. In the track events Technology far outclassed Harvard, the latter being stronger in the field. There was no particularly fast time made except in the 100-yard dash won by Wilson, '14, who equalled the Technology record in 1903 made by Franklin, '03.

Undergraduates Celebrate the Anniversary

On the Wednesday following the last day of the Congress of Technology, the undergraduates gave a dinner at the Tech Union at which over two hundred of the students were present. The principal speaker and guest was Frank J. Sprague of New York City, a pioneer in electric traction work. The other speakers were members of the faculty and students representing the various course societies. The Technology orchestra of eighteen pieces furnished the music. Mr. Sprague is a graduate of Annapolis and when he arose he was greeted with the spirited Navy yell given by the graduates of the Naval Academy who are now studying naval construction at the Institute.

Cathedral of St. John the Divine

The dedication of the great cathedral of St. John the Divine, New York City, took place last month after a period of planning and construction covering thirty-nine years. The architects selected for this great undertaking were Heins & LaFarge. While George L. Heins, '82, was an architectural student at the Institute, he met C. Grant LaFarge, '83, who was also pursuing a special course at the Institute, and who later became his partner. Mr. Heins is now dead and Mr. LaFarge was the representative of the original firm at the dedication.

Dr. Noyes on the Council

During the Easter recess, Dr. Arthur A. Noyes, '86, attended the meetings of the National Academy of Sciences at Washington, of which he is a member, and presented a paper on "The Properties of Salt Solution in Relation to the Ionic Theory." Dr. Noyes was elected a member of the Council of the Academy for three years. He also attended a meeting of the American Philosophical Society in Philadelphia and spoke at a meeting of the Washington Society of the M. I. T. April 17.

The Celebration in Pittsburg

The annual dinner of the Pittsburg Association was held at the University Club on April 11th. The dining-room was handsomely decorated with Tech banners. Back of the speakers were pictures of Presidents Rogers and Maclaurin draped with the cardinal and gray colors and each of the columns in the dining-room carried a banner bearing the name of a president of the Institute with his years of service.

Among the speakers were Charles F. F. Campbell, '01, who spoke of the Institute; Alvan L. Davis, '98, whose subject was "Capital and Labor"; and W. E. Mott, '89, who gave reminiscences of the recent trip of civil engineers to Panama.

During the evening telegraph messages were exchanged with Boston, and Campbell was kept busy receiving wireless messages, which, from their lack of relevance, seemed to emanate from a point within the room. The messages from Boston bespoke the substantial interest of alumni which will be unanimous when the opportunity is offered.

The merry celebration was interrupted by a message of greeting and congratulation from the Alumni Association of Stephens Institute which was banqueting in another part of the club. Thereat, every man with stein and loose flowers swarmed upstairs and taking the Stephens men by surprise pelted them with carnations and gave them a rousing cheer. The Tech men had hardly returned to their own room when the Stephens alumni paid a return visit, lustily cheering Tech.

Henry D. Shute, '92, acted as toastmaster. During the evening a silent toast was drunk to Ellen H. Richards, '73, and C. Snelling Robinson, '84, paid a tribute to her successful achievements in her chosen profession.

The new officers of the club are: Warren I. Bickford, '01, president; Fred Crabtree, '89, vice-president; L. K. Yoder, '95, secretary and treasurer. Executive committee,—Morris Knowles, '91; Wm. E. Mott, '89; Edward Seaver, Jr. '01; representative to Alumni Council, H. A. Rapelye, '08.

Courtesy of the Chamber of Commerce

Through the courtesy of the Boston Chamber of Commerce, the April number of *Advance New England*, a monthly publication of the Chamber, was devoted entirely to the interests of the Institute. Contributions were all made by members of the Chamber of Commerce who were also Tech men. The subjects treated include "The Fiftieth Anniversary of Massachusetts Institute of Technology," by Walter B. Snow, '82; "The New Technology," by Frederic H. Fay, '93; "Technology and the Public Health," by C.-E. A. Winslow, '98; "Applied Chemistry," by Alan A. Claflin, '94; "The Institute and Industrial Education," James P. Monroe, '82; "Scientific Method and Business," Russell Robb, '88; "Facts, Figures and Features," Roger W. Babson, '98.

Technology Swamps Brown

In the dual track meet between the Institute and Brown University, held at Providence, April 29, Tech was victorious over its opponents by a score of 94 to 32. Three new Tech records were made. In the hammer throw, Metcalf, '12, made a new record of 130 ft. Chamberlain, '11, made a record discus throw of 117 ft. 1 3-4 in. Another new record was the pole vault of Salisbury, '11, 11 ft. 5 5-8 in.

The meet was an enthusiastic one and a large number of Tech undergraduates attended. The Tech alumni in Providence were also out in force.

Monthly Meetings of '08

The New York members of the class of '08 will hold informal monthly dinners at the Technology Club of New York, 17 Gramercy Park, on the last Saturday of every month. Members of the class having business in New York should make it a point to be there to take in these reunions.

H. S. Osborne, '08, with the American Telephone and Telegraph Co., 15 Dey St., New York City, is in charge of these dinners.

The Tech Show

"Frenzied French," the thirteenth annual Tech show, which was given in the Shubert Theatre, Boston, Thursday and Friday afternoons, April 20 and 21, was unquestionably the best effort in this direction that has ever been presented by the undergraduates of the Institute. It was thoroughly up to date, and was a purely American comic opera dealing with the adventures of a number of college boys and girls at a house party

F. H. Smythe, '12, as "Dolly," in "Frenzied French"

on Long Island. The book was clever, the music was good and the lyrics were fresh and full of happy hits that were fully appreciated by audiences that completely filled the theatre at each performance. As compared with any former play given by the students, the production may be characterized as finished.

While the book, music and lyrics were all original with Tech undergraduates, much credit must be given to the coach, Mr. Eugene B. Sanger of New York, who handled the show this year for the first time. The hit of the play was F. Hastings Smythe, '12, who took the part of the charming heroine, Dolly Carter. No one since Belden of past fame has made such a stunning girl as Smythe who is also possessed of an excellent tenor voice. Louis de Florez, '11, gave some very remarkable impersonations in addition to taking a most difficult part. In rapid succession he appeared as a German inventor, a French roué, an Italian organ-grinder, and a Chinese opium fiend. His work throughout the piece was hardly less than professional.

It is not the province of the REVIEW to speak in detail of the parts that were skillfully taken by Tech students. It is enough to say that the show stands in the front rank of amateur performances ever given in Boston. The choruses were especially good; the men made up into charming chorus girls and danced like the real thing. The book was the work of Edwin C. Vose, '11, and Wellesley J. Seligman, '12. The music was principally by Orville B. Denison, '11, S. B. Putnam, '11, and C. C. Peirce, '11. The lyrics were principally written by Edwin C. Vose, '11, David F. Benbow, '12, and H. W. Barker, '14.

Status of the Institute Bill

The resolve apportioning $100,000 from the State of Massachusetts annually for ten years to the Institute of Technology, after passing the Senate was reported favorably by the Ways and Means Committee of the House on March 31 with the following amendment:

"Provided, however, that the payment for 1917 and for the four following years shall be conditioned upon the presentation of satisfactory evidence to the Governor and council that the said Massachusetts Institute of Technology has received by bequest or gift from other sources, the sum of one million dollars in addition to all the funds held by it on the day of the approval of this resolve."

It passed the House unanimously on May 3 and went to the Governor, May 16.

Laurels for Tech Men

It must be a very calm and well-poised set of men, the alumni and former students of the Institute of Technology, who can today go about their usual duties without a feeling of egotism and self-consciousness which might prove irritating to their non-Tech associates. We question whether any body of men ever received so many compliments in the history of humanity as they received last night from the speakers at the Tech jubilee banquet. The great leaders among them were given credit for tremendous achievements for city, state and nation, while the rank and file, every mother's son of them, were told that no important engineering work in this country could have been brought about without them. When the president of the General Electric Company made the assertion that he was a poor assembler of good material, and that the good material was largely composed of Tech men, the climax of laudation was reached.

The keynote struck throughout all these addresses last night was efficiency. Tech men have certainly "made good." They have deserved all that has been said of them by the speakers and by the general verdict of the country; and the jubilee just concluded was a climactic proof of the vitality of this organization as conceived by Rogers, carried on so well by his successors, and now in the hands of Maclaurin, to whose initiative and general supervision a large share of the credit for the magnificent success of this congress and anniversary is due.—*Boston Transcript*, April 12.

St. Louis Society Formed

The St. Louis Society of the M. I. T. came into existence as an organization on the fiftieth anniversary of the granting of the charter to the Institute, with sixteen loyal sons of Tech present. There are a large number of Tech men located in and about St. Louis and with the general quickening of interest in Technology affairs among the alumni all over the country, the absence of any outlet for Tech exuberance in St. Louis was keenly felt.

The opportunity for completing an organization at the time of the Congress of Technology was seized upon. A jubilee banquet was held at the University Club, and amid toasts to Tech and felicitations and good news from Boston, the St. Louis Society was born.

The election of officers for the ensuing year resulted as follows: J. L. Mauran, '89; A. M. Holcombe, '04; W. W. Karnan, '08, executive committee; A. M. Holcombe, '04, secretary-treasurer; W. W. Karnan, '08, assistant secretary-treasurer.

Luncheons are held weekly on Fridays at 1 p. m. at the St. Louis lunch room, 4th and Locust Streets, which are well attended.

Hartford Club Jubilates

The annual meeting and banquet of the Technology Club of Hartford was held on April 11th in the rathskeller of Harry Bond's restaurant. Telegrams were exchanged between the club and the committee in Boston and a letter of felicitation and congratulation from President Maclaurin was read.

The following officers were elected for the ensuing year: Ernest W. Pelton, '03, president; R. J. Ross, '08, vice-president; and George W. Baker, '92, secretary and treasurer. The above officers with B. S. Clark, '00, and Carl E. Peiler, '04, form the executive committee.

There were about twenty-five present at the meeting.

Simultaneous Meetings of Alumni Associations

This issue of the REVIEW contains brief reports of meetings held by a number of Technology clubs throughout the country in connection with the Fiftieth Anniversary Banquet held in Symphony Hall, April 11. The following meetings were held in addition to those of which we print reports: Buffalo, Chicago, Cleveland, Denver, Harrisburg, New Bedford, Portland, Ore., Providence, San Francisco, Seattle, Spokane.

Tech Defeated by the Navy

A little over a month ago Captain Herreshoff, manager of the Tech crew, received a request from the Naval Academy asking for a race April 29. The financial prospect of the crew for the coming season has not been very promising. It was without a shell and nothing had been done in the way of practice. The members of the crew were unwilling to pass by this recognition from the Naval Academy and after consulting with some of the alumni, the challenge was accepted. A sufficient sum was raised to rent an eight-oared shell, and secure the services of Coach O'Leary who handled the crew last year.

The race was rowed at Annapolis in slow time on account of troublesome wind and choppy water. The Middies won the two-mile race by about two lengths. The winner's time was 11 minutes and 17 4-5 seconds; the loser's was 8 seconds slower.

The Tech crew's lack of training was very apparent toward the latter part of the contest. For the first three quarters of the race, the boats held together splendidly, but when the Navy hit up the stroke, Tech was unable to respond in kind. The Midshipmen were in excellent condition and training, and averaged eight pounds heavier than the Technology crew. The visitors were most hospitably treated during their stay in Annapolis and were highly complimented on their good showing.

Syracuse Men Enthusiastic

The Technology Club of Central New York held a meeting and dinner at The Onondaga, Syracuse, April 11th. Messages of congratulation were exchanged between Boston and the members of the club and announcements of gifts from alumni to the Institute were telegraphed from Boston.

Enthusiasm at the meeting of the club ran high and at an informal meeting after the dinner a subscription committee was appointed to assist the general committee in raising funds for the new Technology buildings which are soon to be erected.

Among those foremost in the enterprise were W. E. Hopton, '86, and H. W. Jordan, '91. A letter from Ward N. Gere, formerly of Syracuse, who was captain of the Tech crew, was read asking the club to assist in financing the crew in order to enable them to race with Annapolis.

Ellen H. Richards

A brief statement of Mrs. Richards' death, which occurred just before the April REVIEW went to press, sent a shock to the heart of every Institute student who had known her at Technology and the mourning of the community where her activities centered was heartfelt and widespread. For forty-one years she had devoted herself to fighting disease and solving economic problems of the household with the lamp of science as her guide. At a time when a woman had no place in American science, her determination, energy and ability, earned for her a position of eminence. The July magazine number of the REVIEW will contain a sketch of Mrs. Richards' life and an appreciation of her work.

In a Place of Honor

The place of honor at the banquet was given to the classes of '68–'69 which were located at a handsomely appointed table in front of the stage.

Members of the classes of '68–'69 present were: James P. Tolman, Col. Anrdew H. Russell, U. S. A., retired, Charles B. Fillebrown, Eben S. Stevens, Ernest Bowditch and Channing Whitaker.

Tech Engineers at the Head

At the annual meeting of the Boston Society of Civil Engineers, held March 15th, the following officers were elected: Charles T. Main, '76, president; Frederic H. Fay, '93, vice-president; S. Everett Tinkham, '73, secretary; Charles W. Sherman, '90, treasurer. Henry F. Bryant, '85, was president of the society last year.

Science Hates Secrets

In past years our manufacturers were often criticised for their failure to utilize as they might the services which scientists could render in the way of devising new methods of production and improving old ones. The business man of those times had more or less contempt for the man of science as unpractical and visionary, seeking knowledge for its own sake and indifferent as to whether it could be made a source of profit or not.

Evidently a good many of the manufacturers are wiser than that, now. The present complaint against them, as voiced by Professor Walker, who teaches industrial chemistry in the Massachusetts Institute of Technology, is that the discoveries made in the many laboratories maintained by the larger business corporations are treated as trade secrets and carefully concealed from other scientists, as well as from business rivals and competitors.

Of course, this habit, if it has come to be generally followed in the industrial world, is a serious obstacle to the general advancement of pure science, so called. It necessitates an enormous duplication of effort, in that several or many investigators have to grope through the dark toward an end which another has already reached. Were it revealed to them their energies could be otherwise used, greatly to the common advantage.

That is the true scientific view, without a doubt, and Professor Walker says that it should be the business view also. To prove this contention, he says, first, that many of the carefully guarded secrets are already possessed by more than one owner, having been independently acquired, and, second, that if, every possessor of one of these secrets were to contribute it to the common stock of knowledge his small apparent loss would be much more than made up by the privilege of using that coming in from all other sources.

That sounds like straight logic and good argument, too, but it may not convince the man whose one trade secret is a considerable part of his capital that he could get a greater, or even as great, benefit from the knowledge of secrets not in his "line."—*New York Times*, April 12.

Weekly Luncheon at Cincinnati

The Cincinnati M. I. T. Club has come into line with weekly luncheons which take place on Thursdays from 12.00 to 1.30 at the Bismarck Grill on Walnut Street.

There are now five clubs holding regular weekly luncheons as follows:

Boston: The classes from '01 to '10 meet at the American House Rathskeller, Hanover Street, Fridays, 12.30 to 1.30 p. m.

Chicago: Northwestern Association of M. I. T., at Vogelsang's Restaurant, 178 Madison Street, Thursdays, at 12.30 p. m.

St. Louis: Technology Club of St. Louis, at the St. Louis Lunch Room, 4th and Locust Streets, Fridays, at 1 p. m.

Washington: Washington Society of the M. I. T., at Wallis' Café, 617 Twelfth Street, Wednesdays, 12 to 1 p. m.

Note: Owing to the closing of Brucker's Hotel for repairs, the Providence Technology Club has discontinued its weekly luncheons. They will be resumed as soon as the repairs have been completed.

Memorials to Mrs. Richards

Through the efforts of former students of Ellen H. Richards, a committee has been formed to raise funds for research work in sanitary chemistry at the Institute. This fund will be known as the Ellen H. Richards Research Fund. Mr. George Wigglesworth is acting as treasurer for the committee.

A committee of women who have been associated with Mrs. Richards in home economic work is gathering material for a life of Mrs. Richards to be written with the approval of Professor Richards. Any material which may be of assistance to the editor, such as letters, photographs, etc., should be sent to Miss Caroline L. Hunt, 32 Eliot Street, Jamaica Plain, Mass.

Professor Lanza is President

At the annual spring dinner of the New England alumni of the University of Virginia, held at the Hotel Brunswick last month, twenty members were present and Prof. Gaetano Lanza, president of the Association, officiated.

Rochester Club in the Van

Members of the Technology Club of Rochester held their annual dinner April 11th at the Genesee Valley Club, twenty-five members being present. Dr. Rhees, president of the University of Rochester, and Roland B. Woodward, secretary of

William E. Hoyt, '68, president of Rochester Club

Chamber of Commerce, both took for their topics "The Advantages of Education." They were introduced by Pres. Wm. E. Hoyt, a member of the first class that was ever graduated from the Institute. Mr. Hoyt related a number of anecdotes bearing on his early experiences at Tech. The twenty-five guests were seated for dinner in the club café. The tables were arranged in a circle, the center space being filled with Boston ferns and flags and pennants in the colors of the Institute. This formed a particularly effective and pleasing decoration.

A number of very encouraging telegrams and letters from Boston were read.

Lusty Cheers from New York

Over one hundred and fifty men in New York and vicinity met for dinner at the Technology Club, 17 Gramercy Park, on the evening of April 11th where the committee had arranged an attractive program. The principal feature of the evening was the receipt of news from Boston over a special telephone wire connecting the banquet room in Boston with the one at the New York Club.

Lansingh, '98, made arrangements for the special wire and presided at the telephone in Boston, while the speeches were being made, the instrument being located just back of the stage at Symphony Hall. While the dinner was in progress, Lansingh called on the New York men for a cheer and with King at the receiver led the fellows in a long Tech yell.

Among those who talked over the wire from Boston were President Maclaurin, Lieutenant-Governor Frothingham, James P. Monroe, '82, Lawrence Allen, '07, chairman of the committee on local celebrations, and I. W. Litchfield, '85.

Alumni Meeting in Philadelphia

The alumni of Philadelphia held a smoker at the Southern Club in conjunction with the Congress of Technology in Boston, on the evening of April 11.

During the evening numerous telegrams of felicitation were exchanged, most of those from the Institute announcing gifts from alumni. N. Bruce Armstrong read a paper on "Artificial Coal and Its Uses." Technology songs, Technology cheers and good feeling prevailed during the evening.

Measuring the Sun's Radiation

Dr. C. G. Abbot, '94, director of the Astrophysical Observatory of the Smithsonian Institution, will this summer conduct an expedition to southern Mexico to make measurements of the sun's radiation, which will be compared with simultaneous observations on Mt. Wilson. Congress has made a special appropriation of $5,000 for this work.

Southern California in Line

Thirty-one of the alumni of the Institute residing in the vicinity of Los Angeles, Cal., met on the evening of April 11th at the University Club to celebrate the anniversary of the founding of the Institute, simultaneously with twenty-five other associations in various parts of the country.

Telegrams were received from the committee in Boston and a message of congratulation was sent to President Maclaurin at Symphony Hall. President Johnson of the local alumni association and a number of Tech and other prominent men were present.

Among the speakers of the evening were W. K. Gaylord, '93; F. H. Merrill, '93; Lyman Farwell, '87; W. B. Russell, '97. Telegrams were received from the Congress of Technology which was being held in Boston, also a letter of congratulation from President Maclaurin.

The meeting was an enthusiastic one and indicated the great strength of the Technology Club of Southern California.

"Technique" 1912

"Technique" 1912 is one of the handsomest year books the students have yet produced. Its chief merit is the art with which it has been arranged and the good judgment used in selecting material. It is handsomely printed as usual, and contains some new features that appeal to the reader. The art work of the students is of superior order, some of the drawings having much merit. The frontispiece is an excellent picture of Professor Gaetano Lanza, "A great force in education, an untiring contributor to science, a sincere friend to every Institute man,—Professor Lanza has the admiration and deep respect of all." The book is dedicated to Professor Lanza.

As is customary, its first appearance was at the Technique Rush which was held April 18 and marked the beginning of the Junior Week festivities. About two hundred undergraduates took part in the rush which was short but fierce. Twenty-five copies of the book autographed by President Maclaurin were passed out to the successful contestants, the books being serially numbered from one to twenty-five.

Celebration in Cincinnati

About thirty Tech men of Cincinnati and vicinity met on the evening of April 11th to celebrate the fiftieth anniversary of the granting of the charter to the Institute.

During the dinner a letter of congratulation from President Maclaurin was read by the retiring secretary and during the evening telegrams from the Boston celebration were read as they were received.

The officers elected were: Walter A. Lee, '00, president; Frederick W. Garber, '03, vice-president; Stuart R. Miller, '07, secretary. The above officers with George A. Cowing, '01, Theodore Green, '05, and H. D. Loring, '07, constitute the executive committee.

After the business of the evening was over, the members retired to disrupt a neighboring bowling alley.

Technology Association of Japan

A dinner was held April 13 at the Kojunsha Club, Kyobashi-Ku, Tokyo, by the alumni of the Massachusetts Institute of Technology, to receive as their guest Mr. Jasper Whiting, representing the Corporation of "Boston Tech" who is in Tokyo as special commissioner from the Institute to inquire into the condition of higher technical education in Japan and to investigate the special needs of students who may contemplate pursuing courses at the Institute.

This meeting was of special interest as it marked the formation of a Technology Alumni Association in Japan and it is the first alumni meeting of Tech men ever held in the Orient. Dr. Takuma Dan was unanimously chosen secretary and treasurer of the Association. Of the alumni now in Japan the following were present: A. Homma, '74, T. Dan, '78, S. Fukuzawa, '88, J. Whiting, '89, T. I. Chapman, '92, H. Maki, '93, F. W. McIntyre, '02.

Detroit Club Swells the Chorus

A large contingent of the Detroit Technology Association held a dinner at the University Club April 11th in conjunction with the Boston banquet. A letter of felicitation was read from Dr. Maclaurin, also telegrams from Boston telling of the gifts of alumni.

Among the speakers were H. M. Smith, '02; Herbert Alden, '93; L. J. Partridge, '88; Wm. R. Kales, '92, and others.

The members of the Detroit Association are now considering the challenge of the Technology Club of Northern Ohio to meet them in friendly conflict on some breeze-fanned sylvan shore during the summer and demonstrate the superiority of Detroit over the caitiffs of northern Ohio.

Work for the Naval Architects

Preparations are being made by the students in the Department of Naval Architecture for a series of tests on the torpedo destroyer *Sterret*, which will probably occur this month. These tests will include the strain on tiller ropes at different angles of rudder to hull, for which Mr. Everett has designed a new recorder which is expected to produce measurements more accurate than heretofore taken.

The department is preparing to place the *Froude* in the water early this month. It will be tested in the Charles River Basin this summer to determine the relationship between the *Froude* and its prototype the *Manning*.

Undergraduates Visit Cape Cod Canal

The first pleasure steamer to enter the Cape Cod Canal now under construction, was the steamboat *King Philip* carrying three hundred undergraduates, most of them members of the Civil Engineering Society. The trip was made on April 15th and the canal was penetrated for about two miles. The Tech orchestra kept things lively on the boat. The party was accompanied by a number of professors and instructors who explained the processes of work.

Tech Men are Qualified

In submitting to Mayor Fitzgerald a list of men who would be qualified for appointment on the Boston Board of Health, the Finance Commission selected six men. In their communication to the mayor they do not give names, but all of them are former students of the Institute of Technology; four have pursued a four-year course at the Institute, another was graduated from Amherst and then received a degree from the Institute while another was graduated from Harvard and subsequently studied at the Institute.

Health Officers' Association

A permanent organization known as the Health Officers' Association of New Jersey was formed last month among a number of prominent health officers of that state. The principal object of the association is the advancement of knowledge relating to public health and sanitation. The president of the association is Chester H. Wells, '02, health officer of Montclair, N. J., and the secretary-treasurer is J. Scott MacNutt, '08, health officer of Orange, N. J.

Dr. Charles G. Abbott Honored

At the annual dinner of the National Academy of Sciences held at Washington last month, the Draper medal was awarded to Charles G. Abbott, '94, director of the Smithsonian Astrophysical Observatory, for his remarkable research work in solar radiation. The award was made last year but a formal presentation was deferred until the annual meeting.

Technology Track Dates

There are two more dates on the Technology track schedule. The first occurs on May 19–20 on the occasion of the New England Inter-Collegiate Athletic Association meet at Springfield and the second is May 26–27 at the meet of the Inter-Collegiate Amateur Athletic Association of America at Cambridge.

AN UNUSUAL CLASS OF READERS.

AN ever-increasing multitude of technically trained men is forging its way into the places of greatest responsibility and influence. The former Students of the Massachusetts Institute of Technology make up an army of more than 10,000 men, and to these men the Alumni publication of Technology particularly appeals.

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The Technology Review

VOL. XIII JUNE, 1911 No. 6

TWO AND A HALF MILLIONS FOR TECH

Large benefactions closely follow the signing of the Institute's Bill by Governor Foss—A considerable amount available for scholarships only

The wonderful unfolding of the Institute of Technology which has been going on for the past two or three years reached a climax last month when within a period of a week, announcements of new sources of income were made which roughly aggregate two and a half million dollars.

The signing of the bill by Governor Foss, granting the Institute $100,000 a year for ten years is the most important of these developments because this money will provide for the running expenses of the Institute and will allow the gifts of alumni to be devoted to buildings and other specific purposes. It means that when the committee to be appointed by the Alumni Association asks for a general alumni subscription for the New Technology, it will be devoted to perhaps a Rogers Adminstration Building, or some such purpose, and under the changed conditions it is estimated that such a fund will double or even treble the income fund which amounted to nearly a quarter of a million dollars and which was raised at a time when conditions were far less promising than at present. It is also to be remembered that the number of alumni has been very materially increased since that time.

The next important announcement was a gift of half a million dollars from T. Coleman duPont, '84, a life member of the Corporation of the Institute. This money is to be used in buying land for a new site and was in a large measure conditional on securing the State grant. There are other conditions attached to this gift but they are of such a nature that the Corporation is confident that they can be easily complied with. One of the stipulations is that a certain amount of land is to be secured for a site in a locality approved of by him, which must be as convenient as possible to Copley Square. This gift providing for the site, practically settles the last determining item in regard to the future policy of the Institute, and with maintenance for ten years assured, and a site for the new buildings provided, it is expected that generous gifts from friends of the Institute will be forthcoming for the erection of new buildings.

The will of Mrs. Rogers provides that the residue of her estate after paying certain legacies to relatives, shall revert to the Institute. The newspapers state that this amount will approximate $500,000.

The Institute will also receive from the estate of the late Francis B. Greene the sum of about $600,000, from a trust fund created five years ago and which was only recently made known to Institute officials. The income from this fund is to be used entirely for scholarships and it will, therefore, not be of material assistance in erecting buildings on the new site.

Announcement of these large gifts may make it look as if the Institute would need little additional help, but the situation is far different. Mr. duPont's offer—should the conditions be fulfilled, as they undoubtedly will be—goes toward buying a site and developing the new school plant, so that it will be used up before long. The Greene fund will be devoted to helping students, so that money may not be used either for new buildings or endowment.

Mrs. Rogers's bequest, however, which is understood to be without conditions, may be used, if this is true, in any way that the trustees see fit. The State's aid has a string, in that it provides that eighty scholarships must be maintained in return.

As the tuition is $250 a year, this means that $20,000 out of each year's $100,000 is to go to helping students in this way. Furthermore, it is pointed out that as the average cost to the Institute for each student is about $470 a year and the tuition charge covers little more than one half of that amount, the school is losing annually $220 on each student. So that when the State and the other scholarships are reckoned all together it will practically use up all of the $100,000 yearly. The Greene fund should yield about $25,000, and other scholarships, not reckoning the Commonwealth's, yield $35,000.

The school's present endowment funds total about $2,500,000 and of this more than $500,000 is tied up for scholarships, leaving the net income-bearing endowment funds which may be devoted to general purposes in the neighborhood of $2,000,000. If the school is to be well fitted to carry on its work when the State aid ceases, in ten years, as it has agreed, then at least $2,000,000 more should be added to the endowment to give an equivalent in income.

When it is considered that to erect the new buildings as planned will cost at least $2,000,000 above the land then the size of the task which the officers of the Institute and the alumni and their friends have set before them is apparent. It is expected that when a campaign to secure the amount needed to cover all of these things and to develop the great field which is now open to Technology, not less than $5,000,000 will be found necessary. What is wanted is bequests or gifts in other forms without conditions attached, although all help is welcome and the money will be expended with the greatest care.

The question naturally arises, why does not the Institute sell its property on Boylston street and Trinity Place and use the money for the building fund. As a matter of fact the restrictions on the Boylston street property are such that a sale at the present time would bring but a small portion of its value. Trade is rapidly encroaching on the residence portion of the Back Bay near the Institute, and undoubtedly the time will come in the near future when the abutters on Newbury street will find it to their advantage to release the Institute from the restriction allowing it to build over one-third of the property only. This will make the Boylston street property extremely valuable.

The development of the railroad land, the building of the new Copley-Plaza Hotel and the extension and widening of Stewart street which will pass through the Institute buildings on Trinity Place, will increase the value of the property there greatly.

It thus becomes evident that the buildings we are about to erect will have to be built with new money. The Corporation faces this condition with confidence and with the full knowledge that the alumni will be of invaluable assistance in raising this money. The land will probably not be sold until after the new buildings have been erected. It is estimated that the proceeds should amount to approximately $3,000,000,

which will be available for endowment. The interest on this amount will make up for the loss of the State grant of $100,000 a year when the ten-year period has elapsed.

T. C. duPont, '84, gives $500,000

One of the most important gifts that the Institute has ever received has just been made by T. Coleman duPont, '84, of Wilmington, Del. The amount is $500,000 and is to be used to purchase a suitable site for the Institute, the location and area to be sufficiently generous in extent to satisfy the donor who as the head of the duPont Powder Company, a life member of the Corporation of the Institute, and a most interested alumnus of Technology, is eminently qualified to pass judgment upon such a matter.

After leaving the Institute, Mr. duPont entered practical work with the Louisville and Southern Exposition, and later, with the Central Coal and Iron Company. He was general manager of the Johnson Company, Johnstown, Pa., in 1893; he has engaged extensively in coal and iron mining in Kentucky and also in construction and management of street railways. He removed to Wilmington in 1900, and since 1902 has been president of the E. I. duPont de Nemours Powder Company; he is president of the Central Coal & Iron Company, McHenry Coal Company, and Min Jelico Mountain Coal Company, all of Kentucky, and of the Johnstown (Pa.) Passenger Railway Company, and the Wilmington Trust Company. He is also director of the Union National Bank of Wilmington. He became a member of the Republican national committee in 1908 and for some years was chairman of the Republican state committee of Delaware.

He is a member of the American Society of Mechanical Engineers, Engineering Association of the South, American Academy of Political and Social Science, Engineers' and Architects' Club, American Society of Mining Engineers; also of the Rittenhouse Club, Southern Club of Philadelphia, Metropolitan Club of Washington; Metropolitan, Lawyers', Manhattan, and New York Yacht Clubs of New York; the Wilmington Club and the Wilmington Country Club of Wilmington, Del.

Death of Mrs. Rogers

Mrs. Emma Rogers, widow of William Barton Rogers, founder of the Massachusetts Institute of Technology, died at her residence, 117 Marlborough street, Boston, May 18, at the age of 87 years, after an illness of a few days.

The loss to the Institute is a serious one as it not only deprives Technology of its best friend, but also shatters the last link that bound us to the early days of its history.

Mrs. Rogers' connection with the Institute covered a period of more than half a century, antedating the establishment of the institution itself, as it began during the time when Professor Rogers was elaborating his plans and seeking aid in carrying them out. Her relation has been that of a proud and indulgent mother whose life was that of the Institute itself. The July Technology Review will contain a sketch of her life and a tribute to her memory.

Tech Gets $600,000

A legacy probably approximating $600,000 is to come to the Institute of Technology from a trust fund created by the late Francis B. Greene of New Bedford. Mr. Greene was a retired Boston lawyer who died in Florence, Italy, early this year. He was the son of the late David R. Greene, a wealthy whaling merchant of New Bedford. He was graduated from Harvard in the class of 1865, and soon after married Miss Rebecca A. Brown. As it is stipulated that the income alone shall be used and that only for aiding deserving students at the Institute, this gift will not be of assistance to the Corporation in the erection of new Institute buildings. It will, however, allow generous provision for a class of men who have reflected much credit upon the Institute.

Bacteriological Research

The B. F. Keith Company of Boston, wholesale dealers in eggs, were recently sued by the government on the ground that the product they were marketing was unwholesome. Experts connected with the Institute of Technology satisfied themselves that the eggs were not unwholesome and believing that the discrimination of the government department of chemistry was entirely technical and unjust, gave such overwhelming testimony to support their belief, that the government suit was lost. Some very interesting facts were brought out by the Institute experts, and the B. F. Keith Company, desiring to go into the matter further, have donated to the Institute a fund of $5,000 for a bacterial and chemical investigation of eggs under varying market conditions, with a view to determining their general wholesomeness. The letter of the company to President Maclaurin is as follows:

We are interested commercially and otherwise in the production, transportation and conservation of eggs and egg products, and having recently been drawn into a controversy involving important questions concerning the decomposition and wholesomeness, and especially the bacterial and chemical contents and changes of eggs and egg products under various conditions, we are desirous of having those and related questions investigated in the most scientific, thorough and impartial manner possible.

For an investigation of this kind we naturally turn to the Massachusetts Institute of Technology, and if agreeable to you we shall be glad to guarantee to the sanitary research laboratories of the department of biology and public health a contribution of $5,000 towards the expenses of such an investigation. The sole condition is to be that whatever results may be obtained shall be promptly published and in a manner calculated to secure their wide dissemination. Our objects in aiding an investigation of this kind are (1) to establish a sound and scientific basis for the industry in which we are engaged, and (2) to solve, if possible, certain problems relating to egg supply and the public health which have gradually arisen in connection with the growth of population in the United States, improvements in methods of transportation and conservation of foods and the administration of the pure food laws.

An Impressive Showing

One of the most interesting features of the May Review was the impressiveness of the showing made by the various local alumni associations. The enthusiasm of the Technology clubs throughout the country, of which more than twenty-five held celebrations in connection with the Congress of Technology, was inspiring, but what would it have been if the announcement of gifts amounting to two and a half million dollars lately made, could have been given out at that time? The strength of the local associations is due largely to the secretaries, to whom hearty congratulations are extended. Nearly two pages of telegrams which were read at the banquet that night showed that the whole country is alive to the possibilities for Technology in the future.

In this connection, credit should be given to the committee on local associations, consisting of Lawrence Allen, '07, Hollis Godfrey, '98, and A. W. Rowe, '01, for their important work in connection with these meetings. Mr. Godfrey's articles on the Congress of Technology which appeared in the Sunday papers all over the country April 9, were of a character to call attention to the dignity and importance of the Institute at the end of half a century of existence.

Profs. W. T. Sedgwick and A. A. Noyes of M. I. T., have been accorded the honor of election to membership in the American Philosophical Society. This institution whose official title notes that it is "held at Philadelphia for promoting useful knowledge," is the oldest scientific association in the country and the conferring of membership is a special distinction. The additions to membership each year are limited among Americans to fifteen.

POLITICS AS A SCIENCE

The story of the successful campaign for State grant—Institute's cause receives friendly assistance from many sources

When the Corporation of the Institute finally decided on the necessity of asking the State for the sum of $100,000 a year for ten years, a committee was appointed from the corporation consisting of Messrs. Livermore, Peabody, Tuttle and F. W. Rollins.

At the request of the Corporation, an alumni committee was appointed with the following members; Messrs. J. W. Rollins, Jr., '78, chairman: H. W. Tyler. '84, secretary; E. C. Hultman, '96, I. W. Litchfield, '85, F. T. Miller, '95, A. F. Bemis, '93, J. A. Curtin, '92, F. W. Hobbs, '89, F. L. Locke, '86, A. A. Noyes, '86, H. A. Morss, '93, M. E. Pierce, '96, Jasper Whiting, '89, the first five constituting the executive committee.

J. W. Rollins, Jr., '78; Chairman of the Committee on State Aid

In October, after this committee was appointed, a joint meeting of the Corporation and alumni committees was held and a general plan of action decided upon. The alumni committee thereupon took up the active campaign holding weekly and often daily meetings until the bill was finally signed on May 20.

The history of the campaign is one involving the pure science of political research with the application of the results to practical politics in an entirely legitimate way. It is unnecessary to speak in detail of the work of the committee, other than to say that while the brunt of the burden devolved upon a few individuals, the coöperation that developed was marvelous and most effective. Immediate assistance came not only from nearly every alumnus in Massachusetts, but from a large number of alumni in other states as well.

Most impressive of all was the handsome treatment by the public citizens of Boston, not intimately connected with the Institute and many of them graduates of other colleges. From every other direction, the Institute bill has generally had the heartiest support, perhaps the most striking exhibitions being at the hearings before the committee on education and the committee on ways and means which have been fully reported in these columns.

For the effectiveness of this campaign

we have to thank principally the President of the Institute on whom the most difficult and trying features of the work have fallen. In hardly less degree, the chairman of the committee on State aid, J. W. Rollins, Jr. '78, and the secretary, H. W. Tyler, '84.

The thanks of the alumni are also due to a number of other men who have devotedly given their attention to the furtherance of this bill regardless of their own business affairs and whose efforts have had telling effect. Chief among these are E. C. Hultman, '96, and R. N. Turner, '05, whose aid was invaluable.

The campaign has been principally one of education and in connection with this work, the Congress of Technology, coming as it did just before the bill went to the governor, was of the greatest value.

The lesson presented is one that can be immediately applied to the greater work before us, that of raising large sums of money for the New Technology from the alumni and every public-spirited citizen.

On Saturday, May 20, Governor Foss approved the resolve granting $100,000 a year from the State to the Institute of Technology for a period of ten years.

The importance of this action on the future of the Institute cannot be overestimated. It provides for all the running expenses of the Institute during a period of ten years, thus relieving the alumni of any responsibility in that direction and allowing them to take a direct and intimate part in the building of the New Technology.

The news of the signing of the bill was received with satisfaction everywhere. Although it cannot be said that the principle involved was generally indorsed, objections were not advanced by the newspapers or representative interests, because of the general understanding that this appropriation was of vital significance to the Institute. The newspapers were most generous in their support of the bill. Some of them frankly stated that they did not approve of the principle, but because of the circumstances, and particularly in view of the community's great interest in the maintenance of the Institute's excellent work, the governor was urged to sign the resolve.

The original bill as presented to the legislature was as follows: "Resolved, that there shall be paid annually, for the term of ten years, from the treasury of the Commonwealth to the Massachusetts Institute of Technology, the sum of one hundred thousand dollars, to be so paid and allowed from the first day of January in the year nineteen hundred and twelve, to be expended under the direction of the Corporation of the said Institute for the general purposes of the said Institute."

It was amended in the senate by providing for eighty free scholarships, applications for such scholarships to be made to the State Board of Education before July first in each year, with the approval in writing of the senator from the district in which the candidate resides.

The bill was further amended by the house committee on ways and means as follows: "Provided, however, that the payment for 1917 and for the four following years shall be conditioned upon the presentation of satisfactory evidence to the governor and council that the said Massachusetts Institute of Technology has received by bequest or gift from other sources, the sum of one million dollars in addition to all funds held by it on the day of the approval of this resolve."

The bill reached the governor on the afternoon of May 15, and he devoted a large portion of the week to conferences with men interested in it. He was opposed to the principle of State aid and on that account he was strongly tempted to veto it, it being stated that his idea was, that State aid should cease at a certain period in the history of any institution unless the State decides to assume control.

The pivotal importance of the grant, to the Institute, however, certainly had a very strong effect, especially in connection with the assurances given by a number of members of the Corporation that in their opinion, the Institute would

never again come to the State for assistance. In signing the resolve, the governor issued the following statement through his secretary, D. M. Holman:

"This bill raises the question of the relation of the State to institutions of higher education. The general policy of making grants to private institutions cannot be approved. This grant to the Institute of Technology can be approved because the institution has always stood in a peculiar relation to the Commonwealth and, therefore, the grant is not a precedent for similar action in the case of other institutions.

H. W. Tyler, '84, Secretary of the Committee on State Aid

"The grant does, however, raise the question of the future relations of the State to the Institute of Technology. Governor Foss believes that even in the case of the Institute of Technology State aid should ultimately cease unless the State takes over the management of the institution. The present time is not an opportune one for the determination of this question, because the Institute is now facing the serious question of removal to a new site, and because its appeal to the public for funds may ultimately make it independent of State aid.

"Governor Foss believes that the State may safely aid the Institute to remove to a new situation, and that by the present grant the institution may be enabled to place itself in such a position that it will be independent of State aid. He feels, however, that the present grant is justified only by the emergency, and that it should be the last unless the State is to assume control.

"In this conclusion he finds that he is confirmed by the President and the other members of the Corporation of the Institute of Technology. President Maclaurin has written the following letter which fully covers the subject:

" 'In reply to your inquiries with reference to the proposed grant to the Massachusetts Institute of Technology for the next ten years, I have to say that, in my judgment, such a grant ought not to be continued indefinitely. I believe that at the end of ten years the Institute should be entirely free from the necessity of looking to the State for such support.'

"President Lowell of Harvard, a member of the Technology Corporation, writes as follows:

" 'Disbelieving in the general policy of grants by the State to support private educational or other charitable institutions, I feel that the grants to the Institute of Technology ought not to go on indefinitely, but that at the end of these ten years the grants ought to cease absolutely, or the Institute ought to pass into state control.' "

The entire campaign for the State grant from its inception has been ably handled by the committee on State aid of which J. W. Rollins, Jr., '78, was chairman, and H. W. Tyler, '84, was secretary. That the scientific method can be applied to politics as well as engineering, has been clearly demonstrated by the successful efforts of this committee.

At the annual initiation of Tufts College chapter, Phi Beta Kappa, Prof. Arlo Bates of the Institute, contributed the poem.

The Tech Lobby

Talk about amateurs in the lobby, the Tech people have put the finest machine into the legislature which has been seen this year. The Tech men in charge of the campaign to get $1,000,000 out of the State went right to the roots of things. They started a big card index with the name of every legislator on it and his pedigree. On these same cards they had written down the names of his father, brothers, sisters, cousins and aunts, and in any case where there was any affiliation with Tech it was carefully noted.

Then the sounding began. Every past member of the legislature, who had been a Tech man or who had got a Tech scholarship for anyone, was pulled into line and given a certain block of men to look after with an obligation to make daily reports in writing.

As a result, almost before the legislature opened, the Tech men knew exactly who were with them, what strings were holding them, and more important, who were against them and why.

Ignoring for the time being, the fish they had captured, they started after those in the pool. These were followed on all possible lines. One man was reached through his brother-in-law who worked under a Tech man in a certain business. Another man was reached on the grounds that an older brother had years before taken the Tech examinations, though he did not matriculate. It has been a smooth business all the time.

The result is that they are approaching the climax without any fear, and even if Governor Foss should stir up they are ready to meet that situation. Talk about business in politics or business methods in legislation, these gentlemen have put in operation a system that would be worth hundreds of thousands of dollars to the big corporations who have to do with legislation. It is true, of course, that this has been a thing on which lobbying could be done right and left without fear of very harsh criticism, but the methods of keeping track of what has been done could easily be turned into other channels provided the card index could be kept in a safe where no prying eyes other than those so entitled could look it over. —*Practical Politics*, April 15.

Congress of Technology Publication

There have been so many inquiries about the publication of the papers read at the Congress of Technology that a tentative arrangement has been made with the McGraw-Hill Book Company of New York City to put these papers into a volume if there appears to be sufficient interest to warrant them in undertaking the enterprise.

This volume will include papers and abstracts of the six sections of the recent Congress, somewhat condensed and arranged for the greatest usefulness as a reference book. It will be well printed, in standard 6x9-inch size, bound in suitable cloth binding and contain approximately 500 pages.

The purposes of the book are twofold: First the preservation in permanent form of the immense amount of exceptionally important material which the papers contained; second, a suitable record of an event of interest to every former student of M. I. T.

In order that the publishers may determine something about the demand for the book, a thousand letters have been sent to former students of the Institute, entirely at random, and it is very likely that many men who would like to receive this book have not had a copy of this letter. It will assist the publishers and will be more likely to insure the carrying out of the enterprise if those desiring a copy will write to Walter B. Snow, '82, 170 Summer Street, Boston. The book will be issued in cloth at $3.00 net, per copy. Orders in advance of publication will be accepted at $2.50 prepaid.

A Profitable Series of Lectures

E. B. Raymond, '90, second vice president, and chairman of the board of managers of the Pittsburg Plate Glass Co., will lecture before the students of the School of Engineering of the University of Pittsburg on the relation of the manager to the engineering graduate.

NO DISTINCTION IN MEMBERSHIP

Alumni Association votes to welcome all former students as full members—An appreciation of Mrs. Rogers by Professor Sedgwick

At the last meeting of the Alumni Council, which was held at the University Club, May 22, Professor Sedgwick, who was present by invitation, spoke at some length of the life and character of Mrs. Rogers whose death has severed the last link which connected us with the original founder, through her devoted interest in the Institute.

Professor and Mrs. Sedgwick were intimately acquainted with Mrs. Rogers, spending several summers with her at her Newport home, where Professor Sedgwick assisted her in editing the Life and Letters of William Barton Rogers. The speaker referred to the happy circumstance that brought together Professor Rogers and Miss Savage, of their eminent fitness for each other, and of the influences that brought Professor Rogers, then connected with the faculty of the University of Virginia, to Boston, where he developed his great life work. He referred to Mrs. Rogers as in a sense the maker of the Institute and hoped that in some way, in some place, her devotion to Technology would be sometime elaborated.

The story of their life in the South and the cause of their removal to Boston was told with many interesting side lights which for personal reasons were not included in the Life and Letters of William Barton Rogers. The speaker said that to know Mrs. Rogers was a liberal education. She was interested and well versed in matters of music and art and was further endowed with a scientific mind absorbing much of the fire of Professor Rogers along the lines of work in which he was most interested. Like Professor Rogers she lived and died for the Institute of Technology. She followed it with fostering love from the very beginning up to almost her dying hour with an eye single to its glory. She knew no divided allegiance. Although the material interests in which she was interested were very wide—being engaged in unnumbered charities, a most welcome guest and queenly hostess, intensely interested in all the world's activities—through all and above all, her first thought was for the school which her husband had conceived and founded. "It is a great thing," said Professor Sedgwick, "to have the life and interest of the founder of the Institute kept alive in this wonderful way by this wonderful woman. If prejudiced in favor of the Institute, it was the prejudice of a mother toward her child. The memory of her interest and affection, her kindness and gentleness, and her abiding faith in the cause of her devotion, is an endowment which will remain with us and which should be passed on to our successors as a precious heritage."

Following Professor Sedgwick's remarks Doctor Noyes, president of the association, asked the members to rise and drink a silent toast to the memory of Mrs. Rogers.

Alumni Dues and Subscriptions to Review Separated

In order to comply with a ruling of the Post Office Department it became necessary to separate the subscription to the Review from the dues of the association. The matter was discussed at a previous meeting of the Council and it was decided to change the by-laws in accordance with the necessities of the case. The changes proposed were printed in the March number of the Review, and more than a month having elapsed since publication, the Council voted to adopt the new by-laws which are as follows:

Article VI

Section 1. The annual dues for all except honorary members shall be one

dollar and with subscription to THE TECHNOLOGY REVIEW, two dollars.

ARTICLE VII

SECTION 1. THE TECHNOLOGY REVIEW shall be the official organ of this Association and its editorial management and publication shall be vested in the Council.

SECT. 2. Members not in arrears shall be entitled to receive all publications of the Association except THE TECHNOLOGY REVIEW to which they may subscribe at the rate of one dollar per year.

The dues of the association will be one dollar a year, and subscription to the REVIEW in connection with the payment of dues, will be one dollar a year. Remittances can be made at the same time by one check if desired. Price of THE TECHNOLOGY REVIEW to non-members and those whose dues are in arrears will be one dollar and a half a year.

ASSOCIATE MEMBERSHIP ABOLISHED

The proposition to abolish associate membership and give non-graduates elected to membership, the same privileges as graduates, thus making no distinction in membership, was discussed at two previous meetings of the Association and balloted on by the members. Secretary Humphreys announced that 726 members had voted in favor of the amendment covering this change and 60 had voted against it. This vote also carried with it the privilege of former students of the School of Mechanic Arts to become members of the Alumni Association upon election by the executive committee.

The present associate members of the Alumni Association will be elected to membership by the executive committee. Former students desiring to become members should make application to Walter Humphreys, secretary.

A pop concert committee consisting of George B. Glidden, '93, chairman, A. P. Underhill, '96, and A. W. Rowe, '01, was appointed by President Noyes.

Franklin W. Hobbs, '89, has found it necessary, because of press of work to resign from the vice-presidency of the Association. James W. Rollins, Jr., '78, was elected vice-president to succeed Mr. Hobbs.

The resignation of Mr. Rollins from the nominating committee left a vacancy in that important body which was filled by the election of Edwin S. Webster, '88.

J. W. Rollins, Jr. '78, chairman of the committee which has just closed its successful campaign for a State grant of $100,000 a year, made a report for the committee. He said that the success of the campaign was due to the united efforts and loyal support of Tech men everywhere. The Institute had a good cause, and was justified in asking for $100,000 a year and it never let up until the grant had been made. The committee was very much gratified to see the strong evidence of appreciation and esteem among men outside the Institute ranks. He referred to the untiring and effective work of President Maclaurin on whom the heavy responsibility of the campaign had fallen and whose faith had been a great factor in carrying the measure through. Mr. Rollins spoke with gratitude of the devoted and intelligent work of the secretary, H. W. Tyler, '84, and of E. C. Hultman, '96, as well as the very important assistance rendered by R. N. Turner, '05. One reason the bill went through was it *had* to go through. It was a serious matter for Technology and without this grant, all of our future plans would have been terribly handicapped. Mr. Rollins said that he believed that when the Technology fund committee starts to raise money for the New Technology, it will find the same loyalty, enthusiasm and hearty support that the committee on State aid had received from the alumni.

Doctor Maclaurin was next introduced and after congratulating the committee on State aid for their telling and successful work he told about the status of the site problem, essentially as reported in another column of this issue. He stated that the result of the campaign for State aid should show us that we ought not to be afraid to ask for big things.

Secretary Humphreys announced that the Alumni Association of Los Angeles had appointed John C. Chase, '74, as its representative on the Alumni Council.

ALL ABOUT SITES

Writer in the Boston Transcript tells what he has heard about the problem of a new location for the Institute

The following article which we reprint from the *Boston Transcript*, May 23, probably gives a fairly good idea of the status of the site problem at the present time. There will be a meeting of the Corporation, June 2, and it is understood that this question will come up at that time with the hope that a selection may be made. The article is as follows:

The trustees of the Massachusetts Institute of Technology have four sites under consideration for each of which considerable favor is shown. They are as follows: In the Fenway, a large strip at the corner of Longwood avenue and Avenue Louis Pasteur, opposite one side of the Harvard Medical School grounds and conveniently near other educational institutions, the Art Museum, hospitals, and where the Young Men's Christian Association building is to be located; on the Charles River Basin at the corner of the Esplanade and Massachusetts avenue, opposite Riverbank Court, between the Harvard and Cambridge bridges; the Allston Golf Club grounds, between Commonwealth avenue and the Boston & Albany Railroad in Allston, and a tract of land bordering Jamaicaway and near Jamaica Pond, between Lochstead avenue and Castleton streets,extending up the hill to Centre street and South Huntington avenue.

There are fifty-five trustees of the Institute and they are pretty evenly divided over the good points of these sites. The division, in fact, is so close that it was said by a man who is thoroughly in touch with the facts, very recently, that should a vote be taken now it is likely that no decision would be reached. It is hoped, however, that within a few days things will come up which will clear the difficulties which have arisen because of land owners being over-greedy in some instances. One of the sites involved deals with a considerable number of people and it is thought that they will try to get so much that they will kill the goose that lays the golden egg, so to speak. Another is almost as difficult to negotiate involving various obstacles from the real estate end. As to accessibility, three sites are about equally advantageous.

While the trustees will not be likely to haggle over a small premuim above what the land may actually be worth, it is sure that they will not consent to be "held up" for any greatly increased price asked solely because they want the tract; the sites are too evenly favored for that. With regard to some of the sites mentioned, options on at least parts of the land are said to have been secured. Some twenty other locations have been under consideration but have been practically abandoned as incapable of being adapted to the school's uses. Two or three of these, however, might be made to serve the purpose in a pinch. The only ones strongly favored are the four mentioned above.

T. Coleman duPont, who was graduated with the class of 1884 and who is a life member of the Corporation, has offered $500,000 to purchase a site and aid in the building of the New Tech. Mr. duPont is a Delaware man. He was in Boston recently and has taken great interest in the purchase of a new site. One of his conditions has been fulfilled—the State aid—and the other is almost surely bound to be. The second relates to the size of the tract to be purchased. Mr. duPont has set a minimum limit on the size of the site, and it is not likely that the trustees will go below that and thereby lose half a million dollars, so that there is little doubt but that he will be called upon for the fulfilling of his generous offer. Possibly the $500,000

will not be the last of his contributions to help his alma mater, for Mr. duPont takes much interest and pride in the school.

It is understood that other contributions already have been received privately on conditions. The State's aid of $100,000 annually for ten years goes only for maintenance, but will help to relieve the school of a burden and indirectly contribute towards the new move.

The new buildings will cost more than $2,000,000 above the land; or at least that is the expectation now. Edward M. Hagar of the class of 1893 has offered to give whatever cement may be needed for construction. This does not mean that the buildings will be built entirely or mainly of concrete; that is a matter that will be decided later, and the opinion of Professor Despradelle of the Institute will be a large controlling factor in reaching a decision. Nevertheless, Mr. Hagar's offer is a generous one and will be a great financial help, for in so vast an undertaking a large amount of cement is sure to be employed.

Preliminary sketches have been prepared for some of the sites merely to give an idea for possible development and to aid the trustees in coming to a decision. In each instance the sketch shows a dignified group of buildings symmetrical in outline and in perfect harmony with one another. At the same time care will be taken to have them useful for the purposes of the school. It is not intended to waste money in extravagant construction, as has been done in some of the newly created college groups —those on the ready-made college idea. Nor is it the intention to permit a helter-skelter building policy to prevail. In a word, Tech will be a good example of city planning adapted to the needs of a great technical school—handsome to look at without a jarring note architecturally, and with each structure adapted to the uses to which it is to be put.

One factor in the building of the New Technology will be the disposal of the old buildings and land. The present site of the two large buildings in Boylston street is restricted so that it cannot be disposed of to good advantage but there is every reason to believe that time will clear this point so that a much larger sum may be realized from the sale than could be obtained under present conditions. It has been suggested that as a site for a large hotel or big business block it could hardly be surpassed. Anyway, it is one of the most desirable pieces of property to be marketed in the Back Bay. The several buildings back of Copley Square can be sold to advantage at any time, as good offers have been received. It is likely, however, that the Institute will not hurry in disposing of these properties which it now owns and occupies, as it will take at least two years to get the new buildings ready; meantime the old ones must be retained. Should offers so advantageous that they ought not to be refused be received it is likely that the Institute might accept them with the provision that the school occupy them until ready to move.

This divided administration is one reason why the new buildings probably will be located within easy access of Copley Square. Too wide separation of the departments during the moving process—which necessarily must be gradual —would entail much trouble.

The first buildings to be erected after the new site is selected will be those to house the engineering departments and to take the place of the structures back of Copley Square. Other building of the group, which will be carefully prepared for in the plans to be adopted for the whole scheme of ultimate development, will be erected as they are needed and as contributions of alumni or the sale of present property may make possible.

It may be said, however, that there will be no rush to market the present plant, as it is deemed to be increasing in value each year, and the whole plan is too big to be hurried and thereby skip a good opportunity to benefit.

The broadening functions of Professor Sedgwick's department have made it desirable to change the title of this department to the Department of Biology and Public Health.

WITH THE ASSISTANCE OF THE PRESS

Boston Newspapers say fine things about Technology and urge its cause before the Governor

The attitude of the newspapers throughout the entire campaign for State aid was generous and helpful. After the bill had been passed unanimously by both houses of the legislature and had been sent to the governor, the following editorial comment appeared in Boston papers:

BOSTON AMERICAN

The Massachusetts Institute of Technology is asking Massachusetts to help her to become established in her new home by appropriating for her use one hundred thousand dollars a year for a period of ten years.

The legislature has wisely granted the Institute's request. There are few institutions in which Massachusetts may feel so much pride, and which reflect so much honor on the name of our State as the Massachusetts Institute of Technology.

She was founded by our great war governor, Andrew, and in half a century she has become the leading vocational school in the world. No other school has received such praise by the educators and statesmen abroad.

In the world struggle for business and in that greater struggle for efficiency which gives society the highest return upon its labor and upon the natural resources consumed, the value of highly trained experts is more and more recognized. Germany's wonderful modern industrial progress has its foundation in an early recognition of this fact and in the careful training of her young men.

The type of education received at the Massachusetts Institute of Technology lies at the bottom of modern industry. The Institute has now eight hundred and fifty Massachusetts boys fitting to become both experts in some important department of modern industry and educated men. To train these young men it costs one hundred and twenty thousand dollars a year more than they pay the Institute for their education. This must be made up by private endowments or by the State.

The school is so young and yet has grown so fast that most of her sons have graduated within the last decade and have not had the time to acquire the great private fortunes from which private endowments must come.

No school is doing greater, if, indeed, any is doing so great a work in training our young men to utilize the forces of nature and her wealth for the highest benefit of society. It is a Massachusetts institution and is worthy of its name. More than one third of the student body are the children of wage-earners who are being taught at less than cost.

If she receives this State aid, she will continue to grow and prosper. If she does not, it may halt her career and that would be a great pity.

CHRISTIAN SCIENCE MONITOR

The State is asked to give special aid for a limited period to one of its institutions that has most distinctly "made good." The case of this Institute has been considered most carefully by the committee on education and on ways and means of both the house and senate. Before these committees the special claims of the Institute were strongly urged by President Lowell, F. P. Fish, chairman of the state board of education, Mayor Fitzgerald, Mr. O'Brien, president of the Central Labor Union, and such representatives of commerce and industry as the president or vice-president of the Old Colony Trust Company, the Plymouth Cordage Company, the W. H. McElwain Company, the Boston Consolidated Gas Company, Stone & Webster Engineering Corporation, and the Gen-

eral Electric Company. All these gentlemen recognized the unique character of the Institute and insisted that money spent in maintaining its efficiency was a sound business investment on the part of the State.

Not to grant such aid as the legislature has recommended would be to neglect an unusual opportunity; large financial support for the carrying out of the scheme of rebuilding is promised by friends of the Institute oustide of the State of Massachusetts, but the promises are all conditional on the Commonwealth's proving its faith in its own institution.

Boston Post

The bill extending State aid to the Institute of Technology, and in larger annual sums than heretofore, for the next decade, has now practically passed the legislature and will reach the governor within a short time. That he may conscientiously and consistently sign it would seem to be evident from the facts in the case.

According to the terms of the bill the State is to grant an annual subsidy of $100,000 to the Institute for the next five years, and promises a continuance for a further period of five years, provided that in the meanwhile $1,000,000 has been received by the school from other sources. No new principle is involved, no departure from the State's policy of declining to appropriate money for sectarian institutions of learning. The thing proposed is to be more helpful to a technical school that is just now in a period of exceptional difficulty, a school that is an honor and a credit to the State and that now proposes to help her boys by the establishing of eighty free scholarships.

Massachustts can afford to be liberal in a cause like this. She will reap from such an investment large dividends of increased efficiency of her citizens.

Boston Herald

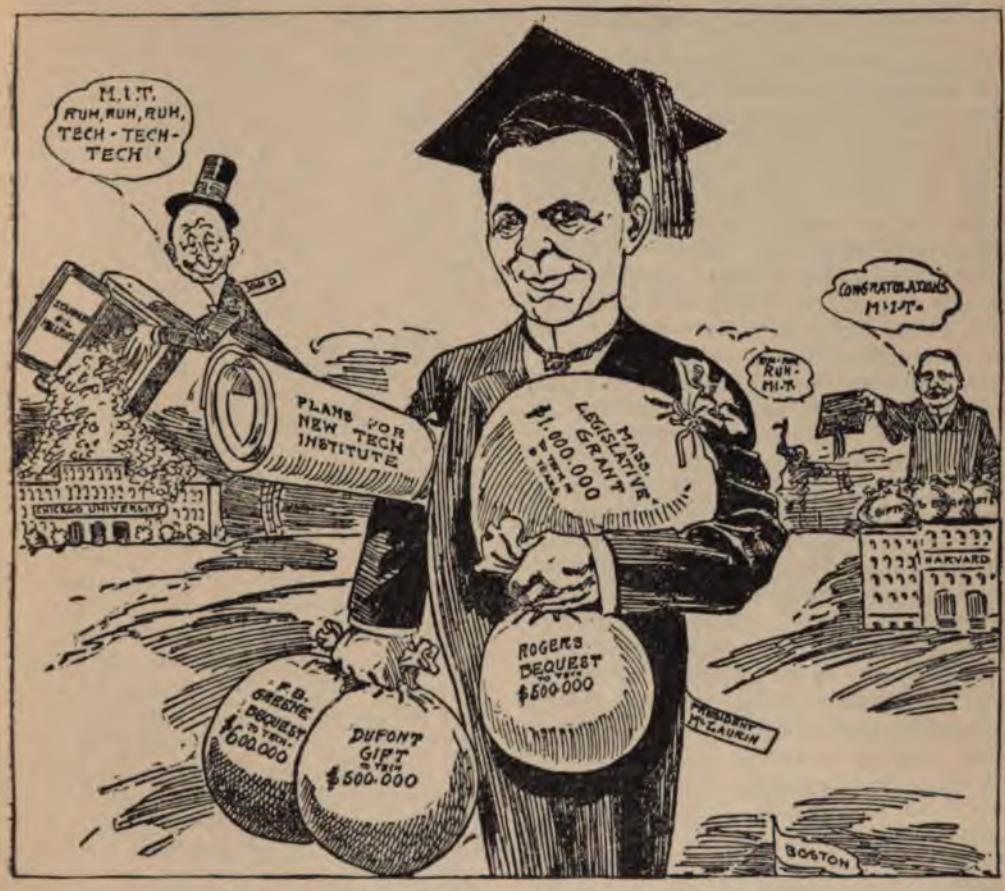
The Massachusetts Institute of Technology is one of the great educational foundations of New England. It was a pioneer in what is essentially the vocational type of higher instruction. It is now, with removal plans under way, passing through a peculiar crisis in its history. Not old enough to have raised a great body of alumni who have reached a position where they can put their shoulders to the wheel to the extent made necessary by its phenomenally rapid growth, it must have help from outside or curtail operations. The Commonwealth has always been to some extent its side-partner, and so to it the Tech not unnaturally turns now.

Although this legislation is bad in principle, the *Herald* doubts if any real precedent will be established thereby. The State has aided the institutions of higher education, in rather illogical and haphazard ways, from the earliest times, as Josiah H. Benton pointed out in his remarks before the committee. The long line of grants to colleges shows no progressive tendency which would emphasize the need of a sudden arrest of the practice now. The State is helping other technical schools; it is supporting the agricultural and normal schools, and it has always given the Institute some aid, making the proposed grant different in degree and not in kind from those that have preceded it. The continuance of the gratuity for the second five years of the ten-year period is conditioned by the terms of the bill on Tech's raising from other sources a million dollars more.

In all these circumstances, and particularly in view of the community's interest in the maintenance of the Institute's excellent work, the *Herald* is of the opinion that the governor would better sign the bill. The last thing the State can afford is to starve out its great educational institutions; they are a peculiarly happy asset of New England, contributing in no small degree to its continuing influence upon the affairs of the nation, in spite of the extent to which other sections are outstripping us in more material things.

Boston Advertiser

Whatever foundation there may be for the rumor on Beacon Hill that the gov-



Apotheosis of President Maclaurin by the Boston Post artist

ernor is not well disposed towards the bill, now before him, to allow a State appropriation to help the Massachusetts Institute of Technology, it is certain that an adverse action on the measure would disappoint tens of thousands of citizens of this Commonwealth. The Institute is comparatively young and has outgrown the resources of its comparatively few alumni, who have strained their financial resources, already. It is non-sectarian, has always been helped by the State, and its wonderful success has been a matter in which the whole State has taken pride. Nobody questions the worth of its work, nor the urgency of its need. It is admitted that this is an exceptional case, and the legislature has been assured by spokesmen for other institutions that an appropriation, if allowed, will not be regarded as establishing a precedent.

It is noteworthy that many prominent citizens of this State, who frankly declare themselves opposed to any general policy of State aid to ordinary institutions of learning, admit that the case of the Massachusetts Institute of Technology is quite exceptional and that it should be so treated. The general sentiment seems to be that Governor Foss would be justified in allowing the appropriation in this case without any hurt to public policy.

If you are not a member of the Alumni Association, join it. Your help will mean a lot to Tech.

Fifty Years of Science

Compared with that of fifty years ago, the world we live in today is indeed a new world. The transformation from the old to the new has been chiefly the work of what we call "applied science." And this new world is new in two senses. It is new, not merely in the conditions of daily living, but also in the ordinary man's mental conceptions. This twofold change was presented with striking sharpness at the Congress of Technology, held in Boston last month in celebration of the semi-centennial of the signing of the charter of the Massachusetts Institute of Technology. So steady has the process of transformation been and so natural do its results seem to us today that it is hard for us to imagine how great the change has been. At an aviation meet last fall one of the spectators remarked that the most surprising thing about it was the fact that he, who had never seen a flying-machine in operation before, found himself accepting it as a matter of course. This is typical of the general feeling toward all applied science. The ordinary man forgets, however, that the benefit he receives from applied science is the result of painstaking, minute technical attention and training. In this era the Massachusetts Institute of Technology has had a large share. A mere list of the speakers at the Technology Congress is an illuminating commentary on the work of such an institution, for the speakers, all graduates of the Institute, represented a great diversity in technical activities. Here, for example, was a man who is at the head of a research laboratory in a great electric company; here was another who is at the head of industrial training in a large negro institution; another who is employed by a concern engaged in the management of public utilities; another who is a chemist under the employment of a state board of health. And the diversity of their topics was equally interesting. One group of addresses was devoted to the investigation and control of industrial processes, and this involved subjects all the way from cotton bleaching to the reclamation of the arid West. Another group of subjects concerned the relation of technical education to industrial development; and this included subjects ranging from the development of different branches of education, such as engineering courses, to the question as to the responsibility of manufacturers for the training of their own mechanics and foremen. Another group had to do with questions of administration and management, and several papers were devoted to methods of efficiency, one in particular giving an account of a concrete example in scientific management. A fourth group had to do with recent industrial development, ranging from the rise of the illuminating engineer to an account of handling the mail in a great railway terminal. A fifth section had to do with public health and sanitation. And the last had to do with architecture. There is, indeed, scarcely any part of the ordinary man's or woman's life that has not been affected by the advance in science. It is only the simple mechanical forms that remain as they were half a century ago. In this great advance the leader has necessarily been what is called "pure science." Before the principles of science can be applied to the solution of particular problems, like that of flying or of cleaning the rugs on the parlor floor, they must, by careful laboratorial research, be established. The Massachusetts Institute of Technology deserves the high place it has won through its devotion to both branches of science. It has been effective in applying knowledge already attained to practical use; on the other hand, it has been steadily pushing ahead to the discovery of new facts and new principles.—*The Outlook*, May 6.

Goss, '92, on Important Committee

A committee has been appointed by the Chicago Association of Commerce to take charge of the work of preparing a report on the electrification of steam railroads of Chicago. Prof. W. F. M. Goss, '92, dean of the College of Engineering, University of Illinois, is one of three members of this committee.

Broadening the Alumni Association

It is quite generally conceded that the effectiveness of the Alumni Association of the Institute is at least equal to that of any other college in the country. The recent action of the association abolishing all distinction between graduates and non-graduates as members of the association, should bring into affiliation with that body every former student who has any interest whatever in Technology. That the association is deserving of united support is shown by the character of the work done in the last two or three years especially by the effectiveness of its committees such as the committee on the Summer School of Civil Engineering, the Congress of Technology, and the committee on State aid. These examples refer to the larger affairs of the association, but perhaps fully as important in the rounded development of alumni work are the many other activities which are quietly going forward and which all tend toward the general advancement of Technology interests.

As has been previously pointed out in these columns, the association has grown tremendously in its financial responsibilities. In 1906, the amount of money handled by the treasurer was something less than $2500; in 1909, it amounted to almost $15,000, and last year, it approximated $18,000.

The larger interest of its members is shown by the promptness with which dues have been paid during the early part of 1911, nearly as many dues having been paid at the present time as were received into the treasury during the entire year of 1910. The larger the interest of the membership, the greater will be the efficiency of the association and all former students now not members of the association who read this, should feel it a privilege to become identified with the new movement which is to place the Institute on even a higher level than ever before. Send applications to Walter Humphreys, secretary, Massachusetts Institute of Technology, Boston.

Obey that impulse! Join the Alumni Association now.

Dartmouth Wins Over Tech

In a track meet which was held by Dartmouth and Technology at Hanover, May 12, the Dartmouth men were victorious. That the points were fiercely contested is shown by the fact that Dartmouth broke its college records in the mile run, shotput, and the two mile run; while Tech reduced six of the old records, the hammer, shotput, discus, pole vault and the quarter and half mile runs. Dartmouth's excellent work in which there were many surprises ran up the score of 81 to 45 against Technology. The biggest surprise of the meet was Ball's win of the two mile run which looked like Tech's event until the last half mile lap. Russell's victory in the 220 yard run was very exciting as he won over Wilson, Technology, by two inches. The new Technology records are hammer, Metcalf, '12, 130 feet, 10 1-2 inches; shotput, Chamberlin, '11, 41 feet, 1 1-2 inches; discus, Chamberlin, '11, 118 feet, 5 inches; pole vault, Salisbury, '11, 11 feet, 7 inches; quarter mile, Guething, '14, 50 4-5 seconds; half mile, White, '11, 1 mile, 58 seconds.

Association Dues and the Review

A ruling of the post-office department makes it necessary to separate the subscription to the REVIEW from the dues of the Alumni Association if the publication is to receive second-class privileges. In accordance with this ruling, the by-laws of the association have been changed so that the dues are now one dollar a year and subscription price for the nine issues of the TECHNOLOGY REVIEW, one dollar a year in cases where members are in good standing. Subscription to the REVIEW for non-members will be one dollar and a half a year. A check for two dollars can be sent to pay both dues and subscription.

It is interesting to note that the subscriptions to the REVIEW have increased nearly 100 per cent. during the last two or three years and it is expected that the broadened constitution of the association which now makes no distinction between regular and associate members will largely increase its effectiveness.

The Congress of Technology

The Congress of Technology, which met in Boston April 10 and 11 in celebration of the semi-centennial of the signing of the charter of the Massachusetts Institute of Technology, was a pronounced success on the two main lines laid out by its projectors. The Congress opened on the afternoon of April 10 with an address by President Maclaurin of the Institute on "Some Factors in the Institute's Success." The greatest of these, he said, was the method of teaching due to William Barton Rogers, the founder of the Institute, and now phrased as "the learning by doing."

The second day of the Congress was given over to the presentation of papers on various aspects of applied science. These papers were grouped in six divisions so arranged that the large numbers of the outside public which attended all the sessions were able to hear papers on the topics in which they were especially interested.

The Congress came to its climax with the banquet in Symphony Hall on the evening of April 11, when the enthusiasm of the thousands of Institute alumni and their guests, who filled the floor of the hall, was a sort of summary of the impressions made by the two days' proceedings. The papers presented at the public session gave to the audiences an extraordinarily adequate idea of how completely applied science shapes and controls the living conditions of the present. And as all the papers were by alumni or members of the Faculty of the Institute it was also made clear how large a part the Institute had played in creating the applied science of today.

These two ideas were expressed along with the third idea more immediately practical at the great banquet. It has been clear for some time that the future development of the Institute of Technology is hampered by the lack of adequate endowments and buildings. The feeling that the beginning of the next half century of the Institute ought soon to see a New Technology, carrying on the standards of the past with greater facilities, was the dominant note in all the speeches at the banquet. The alumni are eager to do their full share toward making this New Technology a reality. Their earnestness was shown by President Maclaurin's announcement that alumni have already definitely pledged themselves to give a very large part of the sum necessary for buying a new site for the Institute, and that Edward M. Hagar, president of the Universal Portland Cement Company has promised as a gift all the cement needed for erecting the new buildings in reinforced concrete. Meanwhile, the choice of the site itself, Doctor Maclaurin said, had been narrowed to three, all of which are within a short distance of the present buildings.—*Electrical Review.*

The New England Intercollegiates

At the twenty-fifth annual meet of the New England Intercollegiate Athletic Association which was held at Springfield, Mass., May 20, Williams College carried away the honors with 30 points; Dartmouth took 24, and Technology 18. The standing of the other colleges was as follows: Maine 14; Vermont 12; Amherst 11; Bates 10; Brown 9; Worcester Polytechnic 8; Wesleyan 6; Colby 5; Holy Cross 2.

The conquest over Dartmouth was unexpected but the ten-year cup will rest in Dartmouth's trophy room because of five previous wins. New marks were made in the four runs, the low hurdles, the hammer throw and the pole vault.

At the annual meeting of the American Institute of Electrical Engineers, in New York, May 16, the Edison medal was presented to Frank J. Sprague by the president of the association, Prof. Dugald C. Jackson, of the Institute. Announcement of the award was made by Prof. Elihu Thomson, of the Corporation, who is chairman of the Edison medal committee, and an address on "The Relations of Government Control to the Development of Electrical Railways and the Electrification of Steam Lines," was given by George F. Swain, '77.

Tech Athletics Unique

Athletics at the Massachusetts Institute of Technology are on a quite different footing from those in other colleges, and the Institute's success in overwhelmingly defeating Brown in last Saturday's meet should make a brief outline of the "Tech system" interesting. In the first place, during the first year a certain amount of physical exercise is in the curriculum, and a student who neglects his work in this line will miss his marks and be kept from promotion just as if the defection was in, say, mathematics.

The system of prize giving is likewise quite different from that usually adopted in athletic work. The students have a physical measurement on entering the school and at the end of the year are measured again. The man who shows the greatest improvement in the essential measures is the man who wins. He might not gain it if it were merely a question of points, but being in percentages of improvement, the weakest man who enters has as good or even a better chance than the man already an athlete. Awards in the shape of medals, five in number for each year, given through the generosity of Samuel Cabot, and five honorable mentions mark those who are winners.—*New York Evening Sun.*

The Tech Bill

The governor has signed the Tech bill, although with some misgivings and after wresting from the management further assurances that this action of his will not be allowed to become an unfortunate precedent. His misgivings as to the present measure could not be traced to any lack of friendliness to the Institute, since he has been one of its prominent benefactors, even offering several years ago to give it a piece of land at Mt. Hope for its new location. He merely shared in the hesitation which Massachusetts men feel over having the State assume any large share of the burden of the higher education; but the safeguards in this instance appear adequate, and the governor must be congratulated upon reaching in a business-like way an extremely sound conclusion. The Tech can now go forward in its splendid career.—*Boston Herald*, May 21.

Pops, Tuesday, June 6

The Pop Concert will occur on Tuesday, June 6, at eight o'clock. The interesting happenings of the last few weeks will no doubt make the celebration something of a love feast. It is expected that the attendance will be large. The committee having the matter in charge consists of George B. Glidden, '93, A. P. Underhill, '96, and A. W. Rowe, '01. It is suggested that the classes meet for dinner before the Pops at various hotels and restaurants near Symphony Hall as they did previous to the Smoker at the time of the Congress of Technology. The graduating class will be welcomed soon after eight o'clock and will be presented with its alumni banner by Doctor Noyes, president of the association.

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Institute of Mining Engineers, a distinction conferred upon only one other woman. She received the degree of Master of Arts from Vassar College in 1873, and her large circle of friends was greatly pleased by the deserved recognition on the part of Smith College in the conferring upon her of the honorary degree of Doctor of Science, in 1910. She was also for many years a member of the Board of Trustees of Vassar College.

In 1884 Mrs. Richards was appointed instructor in Sanitary Chemistry at the Institute of Technology, a position which she held at the time of her death. For many years she directed the entire instruction in the chemistry of air, water and foods, for chemists, biologists and sanitary engineers, and only relinquished the chemistry of food supplies when the pressure of other affairs made this necessary. Her service as an instructor was helpful and inspiring, and the extent of her personal and financial sacrifice for her pupils and for the increase of the effectiveness of her laboratory will probably never be adequately known or appreciated. She also maintained an extensive private practice in sanitary chemistry for many years and acted in an advisory capacity for a very large number of public and private institutions. Her publications relating to sanitation have been numerous and varied, and she maintained active membership in, and participated in the meetings of local and national societies dealing with water supplies and public health problems.

All of this would seem a sufficient achievement for even a busy life, but there still remains what may possibly be regarded as the most important aspects of Mrs. Richards' life work, namely, her leadership in matters pertaining to home economics and to the education of women. Preëminently a successful organizer, she gave more and more time and attention in recent years to problems relating to the conservation of human life and energies and the uplift of her fellow beings. With extraordinary energy and tireless activity, she traveled from one end of the country to the other, lecturing, teaching and, when necessary, pleading in behalf of the causes which were so dear to her. In this work she was highly successful, not only in the attainment of immediate benefits, but in the inspiration of others to foster and continue the enterprises which she inaugurated. It is gratifying to note that plans are already on foot to bring together a memorial fund to be known as the Ellen H. Richards Research Fund, the proceeds to

be used for the promotion of advanced work in Sanitary Chemistry, in recognition of her labor and self-sacrifice. Her writings upon household economics and kindred topics include numerous books of recognized value, a large number of papers read before gatherings of the most varied character, and many magazine articles.

Her death occurred at her home at Jamaica Plain, after a brief illness. She literally spent the last remnants of her strength in public service, never fully recovering from the strain of her last public speech in behalf of better standards of living.

A powerful leader, a wise teacher, a tireless worker, of sane and kindly judgment, Mrs. Richards has taught and inspired thousands to carry forward the movements which she has inaugurated. Her associates and co-laborers necessarily mourn their loss and miss her leadership, but they will best express their appreciation of her life and its far-reaching influence by increased activity in behalf of those phases of human progress and betterment for which she sacrificed herself so freely.

H. P. Talbot, '85.

IN MEMORIAM

ELLEN H. RICHARDS

A voice is hushed: but ere it failed,
The listening echoes caught its tone,
And now its message clear and keen
On every wind of heaven is blown.

A staff is broke: but ere it snapped,
Those who had leaned on it so long
Had made its steadfast fibre theirs,
And fare now forward, straight and strong.

A light is quenched: but ere it paled,
It lit a hundred torches' flame,
That shine across the darkening sky,
And star with gold one honored name.

L. E. R.

April, 1911.

MRS. RICHARDS' UNIQUE POSITION

An appreciation of her work at the Institute by Prof. Sedgwick

We have lost a great teacher. For whatsoever else Mrs. Richards was—and that was much—she was first and foremost a teacher. She was fortunate in being closely associated in her professional education and in her professional work with two distinguished chemists, the leaders of their time in sanitary chemistry, a subject which she early made her own. From William Ripley Nichols especially, who from the time of his graduation from the Institute in 1869—the same year in which the State Board of Health of Massachusetts was organized—until his death in 1886, was the highest authority on water analysis in the western world, and whose mind was one of the keenest and finest that I have ever known, Ellen Swallow as a student, and Mrs. Richards as an assistant and associate, gained her principal training in the methods and ideals of sanitary science and public health service. And when Professor Nichols' successor, Dr. Thomas Messinger Drown, was invited in 1887 by the then newly-organized State Board of Health to take charge of the sanitary survey of the inland waters of the State, the first in that brilliant series of sanitary undertakings which have brought renown to Massachusetts, Professor Drown turned at once to Mrs. Richards as the proper person to supervise and administer the great laboratory for water analysis which the State Board of Health established, and for years maintained in the Walker Building of the Institute. Here a few years later a celebration was held when the ten thousandth specimen of water sent in for analysis came to be analyzed. Here also was prepared that famous "normal chlorine" map of Massachusetts which was the first of the kind to be prepared anywhere and which has served as a model in sanitary surveys of states and countries all over the world. This laboratory, always presided over with a firm yet genial hand by Mrs. Richards, will long remain famous in the annals of American water analysis. From it have gone out dozens of men and women who are today directors or workers in similar laboratories all over the United States.

But fond and proud as Mrs. Richards was of her laboratory of sanitary chemistry, she was never restricted to that narrow space. At her home in Jamaica Plain, where hundreds of Technology students and teachers have from time to time foregathered and shared her gracious hospitality, she found time to prepare a series of books which extended her influence as a teacher to schools, colleges, clubs, associations and societies almost without number. She was rightly recognized as an authentic speaker upon a wide range of sanitary subjects and was always heard with respect and regard, for the very reason that she spoke with the authority of the laboratory and the scientific world and not merely as one of the scribes. The mere enumeration of her writings would fill a column and one needs only to open one of her volumes, such for example as her latest, "Conservation by Sanitation," to marvel at the breadth of her writings and the extent of her reflection upon sanitary themes. She was without question a master of her subjects, and the foremost sanitary authority of her sex in the whole world, and yet Mrs. Richards was always a woman, believing intensely in the home and its fundamental importance. Most of her books and writings deal in fact directly with the home, such for example as "The Chemistry of Cooking and Cleaning," "The Cost of Living," "The Cost of Food," "The Cost of Shelter," "The Art of Right Living," "The Cost of Cleanness"; and although her interests and work reached out far beyond the home and into the world at large, she was ever mindful of its supreme importance in American life.

Mrs. Richards was a graduate of Vassar College, always a loyal alumna and for a long time a trustee. She was, however, no less devoted to the Institute of Technology, from which she received the degree of bachelor of science in chemistry in 1873. She appreciated intensely that rigid discipline which has always characterized its training and she was keenly alive to its achievements and its rising reputation. She was personally and closely attached to its founder and first president, William Barton Rogers, and his wife. To the women students of the Institute she stood literally *in loco parentis*, and many a girl struggling to meet financial obligations or the academic requirements of the Institute has found in Mrs. Richards an elder sister or a foster mother. It was, therefore, with the greatest satisfaction that her friends and colleagues learned of the conferring upon her of the degree of Doctor

of Science by Smith College at its recent anniversary, for upon no one could that degree have been bestowed more justly.

It is a matter for congratulation that death came to Mrs. Richards, doubtless as she would herself have wished, while she was still full of intellectual vigor and hard at work. Many gaps left by death are not difficult to fill, but this is not the case with Mrs. Richards. Her position in the Institute and her work in the world were both unique. No one can fill her place. Other women may become experts in water analysis, and preside over laboratories, but no one hereafter can possibly gain the peculiar historic equipment which fell to Mrs. Richards. Other women may, and no doubt will, make addresses and write books upon sanitation and the home, but no one else can ever do these things as Mrs. Richards has done them, for the reason that she was herself an evolution and represented an epoch. We are always too prone to undervalue things familiar and near at hand, and Boston and Massachusetts have never adequately appreciated Mrs. Richards or her work. But now that she is gone and no one can possibly take her place, we may begin to realize the extent of our loss.

Those of us who have had the privilege of being her colleagues and enjoying her friendship will miss her vigorous personality, her sane and keen judgments, her cheerful smile. We are grateful to have shared her companionship and to have felt her womanly influence. Her name is already writ large in the history of New England women and of the Institute, and many who knew and valued Mrs. Richards will hold her in affectionate remembrance, both for what she was and for what she has done.

W. T. Sedgwick.

Boston Transcript, March 31.

The growth of the advertising in the Technology Review is entirely spontaneous, as the Review has no advertising solicitors nor does it employ agents. The number of Reviews printed and circulated this year including the July number is 30,000; the November and December numbers which will complete the year will bring the total to nearly 40,000. The character of the advertising carried is the best indication of its usefulness.

ACTION OF WOMAN'S EDUCATION ASSN.

The Woman's Education Association wishes to express the deep sense of personal loss which comes to it by the death of Mrs. Ellen H. Richards. Since 1875, for thirty-six years, Mrs. Richards has been a member of our association. During all this long period there has never been a time when she had not been actively engaged in furthering one or more of the most vital and interesting features of our work. As volunteer teacher, as hard-working member of various committees—notably of the Chemical Laboratory for Women, of the Summer Laboratory at Annisquam, and of the Domestic Science Committee, as chair, man of the Committee on Public Schools, and as vice-presiden- of our association, she was untiring in the wise and enthusiastit service which she rendered. Many enterprises of importancc to the welfare of the community are included in so long a perioe of active work. Among them all it is well to remember witd special gratitude the generous help given so long ago by Mrh Richards to the development of the opportunities for womes. at the Institute of Technology. In the annual report of oun association for 1883, at the end of the sixth year of the work or the Sub-Committee for the Chemical Laboratory for Womenf there is the following tribute to Mrs. Richards:

"The results thus far have exceeded our anticipation, but they have been obtained at the cost of great personal sacrifice on the part of a few devoted workers. To one of the professors (of the Institute) and to Mrs. Ellen H. Richards, a member of our association, our success has been due. Mrs. Richards was the inspirer of the enterprise, and has not only given it the benefit of her experience and thorough scientific training, but has lavished upon it time, and strength, and money. To the successful carrying out of the work then tentatively begun is due the assured existence of the laboratory as part of the Institute of Technology."

Such was the quality of effort given by Mrs. Richards to one of the earliest undertakings of our association. For nearly thirty years she continued to work for the department thus established. This persistency, this faithfulness and unflagging

enthusiasm in face of all obstacles, this generous giving of herself, were characteristic of Mrs. Richards in every piece of work to which she lent her hand. Our association is grateful for its share of so long and so fine a record of noble service to the community.

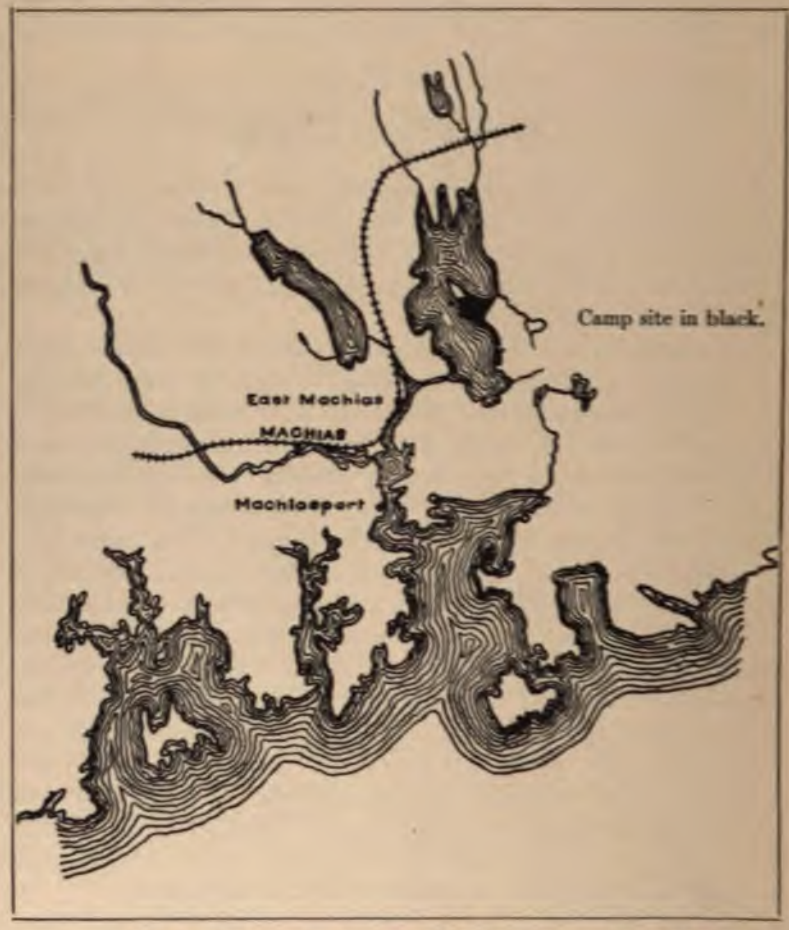
Technique Pays a Dividend

Technique 1911 closed its accounts late in the spring with a balance to its credit of $717.82. This is almost an unprecedented event, and is due to the business-like methods employed by the board, to the foresight of its managers and to the diligence of all those connected with it.

The application of this surplus is equally commendable: $250 was given to the Athletic Association to send the track team to Springfield to compete in the New England Intercollegiate Athletic Association meet this spring; $125 has been appropriated to provide record boards for perpetuating athletic records at the Institute. There are to be fifteen or twenty of these boards handsomely finished and framed, each board to be devoted to not more than two athletic events. These will be probably located in the Union and on them will be the names of past and present record holders with a space for the record breakers of the future; $60 was appropriated to help the Senior Portfolio committee, and $50 was devoted to souvenirs for the senior class dinner which were in the form of small gilt ash trays, handsomely embossed with the Technology seal. Each man present at the dinner received one of these. As is usual when there is a surplus, gold watch fobs were provided for the members of the Board. There is a small balance in the treasury and a few unpaid advertising accounts so there will probably be $75 or $100 more to the credit of the Board.

Special Site Committee Named

At a meeting of the Corporation held in June, the following members of the Corporation were made a special committee on site with power: President Richard C. Maclaurin, George Wigglesworth, Everett Morss, Francis R. Hart and Edwin S. Webster.



Map showing location of property—Scale 4 miles to the inch.

THE NEW YORK
PUBLIC LIBRARY

CHARACTERISTIC SHORE SCENERY

LOOKING TOWARD ISLAND AND BOAT-HOUSE COVE

VIEW OF SITE FROM ACROSS THE LAKE
The camp will be located just above and to the left of the eroded bank

BOAT-HOUSE COVE,—ON THE PROPERTY

THE NEW YORK
PUBLIC LIBRARY.

THE SUMMER SCHOOL OF CIVIL ENGINEERING

Description of the beautiful site presented to the Institute on the shore of Gardner Lake near East Machias, Maine, and some of the plans for its development

Five years have elapsed since plans were outlined for the establishment of a summer school as an integral part of the course in civil engineering offered to the students of the Massachusetts Institute of Technology. The subject was first broached by Professor Swain and was called to the attention of the Corporation by the President in his report of December, 1906. The cause was further advanced by investigations by the department of civil engineering during the next two years. In the fall of 1909, the newly organized Alumni Council, looking for some field of activity in which the alumni might coöperate with the Corporation to the advantage of the Institute, took up consideration of the summer school project and appointed a committee to investigate and report upon it. And now, after two years of coöperative work between the committee and the professors of the department of civil engineering, the plan for a summer school is taking definite shape in a most encouraging way.

The idea of establishing a summer school of engineering is not a new one, for the Institute has already conducted summer courses in these subjects at South Deerfield and Lancaster, Mass., Schoharie and Keeseville, N. Y., Delaware Water Gap, Pennsylvania, Lake Sunapee, N. H., and at Ellsworth, Cherryfield, Rangeley Lake, Machias and East Machias, Me. The courses in surveying, field geology and hydraulic measurements thus given were optional, however, and were taken only by a part of the students enrolled in the department,—usually by not over twenty-five men.

With the growth in numbers at the Institute, and the necessity for going longer distances to find suitable locations for the work, with resulting waste of time and energy; with the constant demands for more available time in the class room for broadening the course; with the growing desire to give more thorough instruction in surveying under more natural and advantageous conditions, the

department has felt the absolute necessity for the development of a summer school of engineering in which courses in surveying railroad location and hydraulic measurements might be given during a period of two months, more or less, in the summer season between the sophomore and junior years of the course, as an essential and obligatory part of the training in this department.

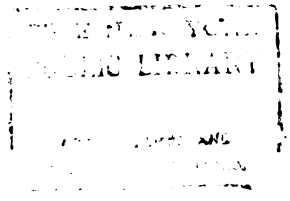
The requisites for such a school were,—a location sufficiently distant from railroads and settlements to develop an independent life, yet sufficiently near so that the traveling expenses should not be burdensome to the students; good hygienic conditions which should insure the building up of the students' health; a diversified topography, suitable for general surveying and railroad field work, including heavily wooded as well as open lands; a large lake or body of water suitable for hydrographic measurements, and giving wholesome camp life and surroundings; ready access to the ocean or to a tidal stream upon which tidal observations might be conducted; a river suitable for stream measurements; and finally, if possible, a location at which power might be developed for lighting the camp, pumping its necessary water supply, and perhaps conducting hydraulic experiments.

Such a school of engineering promised to make the courses in surveying and hydraulics broader and more effective, to train the student in camp life and bring home to him in a practical way some of the important questions of hygiene involved by it, to simplify the problem of giving to graduates from other colleges desired training in the shortest possible time, and finally, to build up an *esprit du corps* amongst the students through their intimate contact with one another and with their instructors in such a camp, which should be of great advantage to them, to their work and to the Institute.

The relative desirability of a permanent camp, or temporary location at different places from year to year, was carefully considered. While the greater interest resulting from having the summer school at different points was clearly recognized, the difficulty of handling large numbers of students increases rapidly with their numbers. With but 25 men, it is possible to find many suitable locations. With a body of 150 students, however, the question of properly housing and feeding the students, providing evening work and class rooms, the control of the camp and the student body, and many other questions of a very practical nature, arise.

FOREGROUND AT THE SITE

VIEW FROM REAR OF SITE



The establishment of a permanent camp was therefore decided upon, and this involved the purchase of a tract of land of at least 200 acres, and made desirable a much larger area.

The committee considered the possibility of coöperating with other educational institutions having summer schools, with some fish and game club, with lumber interests, and even of going into some coöperative forestry enterprise, but fortunately it was finally able to purchase a site which will leave the Institute independent of others, free to develop along such lines as may hereafter prove most desirable.

In response to the committee's desire that all promising summer school sites should be personally visited, Prof. Arthur G. Robbins of the civil engineering department, generously offered to give a considerable amount of his time to such inspection, as did other members of the department. Topographic maps of the New England states were carefully and systematically examined and the summer schools of engineering of other colleges were visited. Many promising situations were considered, with the result that a site was chosen upon Gardner Lake near East Machias, Me., which is situated in a locality in which the summer school of engineering had already been held.

East Machias lies at a distance of 347 miles from Boston, upon the Maine coast, between Bangor and Eastport. It is upon the Eastport line of the Maine Central Railroad and when the summer school shall be attended by upwards of 100 men, it may prove possible to charter a steamer to transport the students to and from it, at the beginning and end of the school term.

A fine location has been obtained for the school, embracing a tract of upwards of 700 acres of land, with three miles of shore line, lying upon the opposite side of the lake and at a distance of about four miles from the village of East Machias. It can be reached either by the highway, running around the southerly and easterly side of the lake and forming the easterly boundary of the property, or by water, from the old sawmill located at the outlet of the lake on a branch of the East Machias river.

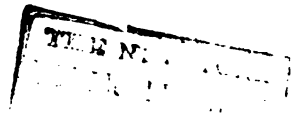
The land is diversified, embracing both highlands and lowlands, forest and field. It has both sandy and rocky shores on the lake, a large island, and many bold and beautiful points running out into the lake. The location is sufficiently far north to give cool nights almost invariably, even though the summer days be warm. The

air is cool and bracing, the water of excellent quality, and the conditions as a whole are all that could be desired.

The site selected for the camp is ideal, being a high and narrow ridge terminating in a long point running out into the lake. Located about seventy-five feet above the surface of the lake, open toward it on both sides of the ridge and toward the hill country beyond it, it stands in a commanding position, while the well-wooded end of the point gives pleasing variety, and a natural screen for some of the necessary structures. Facing the lake and the prevailing winds, built upon a ridge, consisting largely of sand and gravel, sloping in three directions, hygienic conditions are perfect, for it is proposed to take the water supply from the end of the point, to dispose of the sewage upon the rear of the ridge, to establish the wharf and bathing beach in front, in proximity to the camp, and to locate the boat house in a protected bay or cove in the rear.

It is proposed to build a long, low building, one story in height for the greater part of its length, in which shall be located the assembly room, drafting room, dining room and kitchen, with perhaps two small lecture rooms and office, and servant's quarters. Beyond and near to this building will be an ice house, cold storage room and provision storehouse. Adjacent to it on the hillside, a small fireproof building to house the instruments and to furnish a camp store, will be constructed. The camp proper will be built in a half moon on the southerly side of the main building, of walled tents, with floors, and a small hospital building will probably be located at some convenient point at a safe distance from it. A small water tank, furnishing running water and limited fire protection, will probably be built under the shelter of the spruce trees at the north of the camp, to which water will be pumped from the pumping station and filter plant, or driven wells, located upon the point. A wharf, with separate superstructure which can be removed during the winter season, will be built upon the water front, for the convenience of the camp, for the use of the boats in all except the heaviest weather, and as a convenient place for bathing. The boathouses will be built in a more protected cove on the east of the point, at which the boats may land in stormy weather.

The preparation of final plans will be undertaken shortly with a view to beginning construction during the early fall, so that the



CHARLES W. EATON, '85

Who has given $10,000 to the Summer School of Civil Engineering

camp equipment may be available for use in the summer of 1912.

The committee calls the attention of Institute men to the charming character of Gardner Lake and to the fact that many available sites for summer camps are to be had upon it on reasonable terms. It is to be hoped that a number of Institute men will be led to build summer homes or camps upon this lake.

How, it may be asked, has it been possible for the Institute of Technology to make provision for the purchase of such a splendid site and equip such a summer school, in the face of so many other pressing needs? Through the keen personal interest and generous impulses of two of her loyal alumni. The first of these, who has preferred to remain unidentified, volunteered to purchase the site and to equip the camp, and another alumnus, Mr. Charles W. Eaton of the class of '85, generously came to the front with a further contribution of $10,000, toward the buildings required by the camp. It will, therefore, be possible for the committee to turn over to the Corporation of the Institute not only the site, but funds for the complete equipment of the summer school camp.

This sketch of the steps leading to the establishment of a permanent summer school of engineering for the Massachusetts Institute of Technology would not be complete without a brief reference to the splendid spirit of coöperation which has made it possible. While the committee has been deeply interested in the project, the actual work of investigation and planning has fallen in largest measure upon the different members of the civil engineering department,—particularly upon Professor Robbins, though valuable service has also been rendered by Professors Allen, Spofford, Burton, Hosmer, Breed and Barrows. The negotiations, leading to the purchase of the twelve different parcels of land involved, have been conducted by Mr. Geo. F. Cary, assisted by the late Mr. E. P. Gardner, both residents of East Machias. To the latter public-spirited men, who for the good of future generations of students, and for the interest of their town, have done this exacting and difficult work, as a labor of love, the Institute is much indebted.

The happy conclusion of this the first effort of the Alumni Council to coöperate with the Corporation to the advancement of the Institute should be a stimulus to Institute men for further endeav-

ors on behalf of their Alma Mater, and there can be little doubt that this summer school will justify the fondest hopes of its promoters and be a vital force in developing the student body, and building up a wholesome Technology spirit.

LEONARD METCALF '92.

The Institute to Benefit

A recent news despatch states that the will of the late Dr. Charles G. Weld of Boston and Brookline, Mass., whose property is said to amount to several million dollars, was filed in the Newport Probate Court, Newport, R. I., June 28. Several public bequests are made.

Doctor Weld's estates in Brookline and Boston go to Brookline and Boston, respectively, for the purpose of public parks. A trust fund of $100,000 is left to George Walker, who is to receive $5,000 annually. Upon Mr. Walker's death the fund goes to the Boston Dispensary. A relative, Elizabeth D. Freeman, receives $4,500 yearly from a trust fund of $125,000. Upon her death the money is given to the Boston Lying-in Hospital.

The Boston Museum of Fine Arts receives all of the late Doctor Weld's Japanese paintings, swords and gold works. The Peabody Museum of Salem, Mass., is given all of his property now in its possession and $25,000.

All of the property Doctor Weld left his wife will go to his children upon her death. When they die, the property is given to the Massachusetts Institute of Technology and the Massachusetts General Hospital.

New Associate Members

The following former students were elected associate members of the Alumni Association on the date indicated:

May 5, 1911: Matthew M. Blunt, '86; Alberto M. Bombrini, '11; Sherwood Hall, Jr., '08; Maurice Ernest Harris, '10; Charles Pray Holland, '92; Albert Kimball Huckins, '10; Richard Franklin Morgan, '96; Roger Leavitt Rice, '06; Harry Alexander Robertson, '10; William H. V. Rosing, '82; Charles McLean Smith, '10; Walter Talbot Spalding, '10.

GRADUATING EXERCISES 1911

Two hundred and fifty-four degrees conferred—President Maclauren's address to the graduating class

The Commencement exercises at the Institute were held in Huntington Hall on the afternoon of June 6.

Two hundred and fifty-four degrees were conferred; 232 bachelors of science, twenty masters and two doctors. The degree of doctor of philosophy was conferred upon Eugene Clarence Howe, A. B., S. B., of Brooklyn, and that of doctor of engineering upon Reginald Lamont Jones, S. B., M. S., of Los Angeles. Twenty students who had taken the fifth-year course received the degree of master of science.

President Maclaurin addressed the graduates as follows:

"The academic year that ends with these exercises will be memorable to a much larger group of Institute men than to the class of 1911, or to that section of it that is about to be enrolled in the great army of Technology alumni. Much has happened within the year to show that Tech is at last coming into its own, and that the pioneer work that it has accomplished in the realm of education is now appreciated at its true value.

"Two months ago the fiftieth anniversary of the granting of our charter was made the occasion of an impressive manifestation of the spirit of Technology. Prominent alumni came from all parts of the Union to demonstrate their loyalty to their Alma Mater and not merely to take part in social functions, but to contribute to serious discussion of those problems vitally affecting the health, prosperity and general well-being of the community. Perhaps, however, the most gratifying feature of those celebrations was the evidence that they afforded of the deep interest of the business world in the work of the Institute and of the general good will towards Technology amongst almost all sections of this community.

"That interest and good will was also strikingly manifested throughout the protracted consideration of the Institute's claim for a continuance of support from the State, and Technology would certainly not have gotten what she did had it not been for the

fact that in every quarter of Massachusetts, men representing the most diverse opinions—social, political and religious—came forward to advocate her claim. And while the Commonwealth has stood behind the Institute at this critical period there has been so much other evidence of substantial support that we are being told, on all hands, that this is preëminently the day of Technology, so that we can have no more doubts as to the establishment of that New Technology, the building of which has been a dream for long. All these tokens of appreciation and of good will are of course extremely gratifying and encouraging, but no one who has caught the spirit of Technology, would think for a moment that we are going to spend much time in mere exultations. This public and private approbation will be regarded by every Tech man as a challenge to continue activity and an incentive to the Institute to keep on doing its best to serve society honorably and well.

"The year that is just closing has been marked by material gains for the Institute, but unfortunately these have been offset by irreparable spiritual losses. The number of women students here has never been large and it is so small today that there is not a single woman in the graduating class. None the less, the influence of woman has been potent in our midst. The Institute owes much indeed to the courage, enthusiasm and high purposes of Mrs. Richards, more than the students of today can possibly realize, to the quiet spirit and influence of Mrs. Rogers, whose spirit compelled loyalty and devotion to the highest aims of every member of the Faculty and of the alumni body that had an opportunity of appreciating it. The New Technology is to be enriched by the generosity of Mrs. Rogers and of the friends of Mrs. Richards and even more, I hope, by the memory of their whole-hearted devotion to the highest interests of the Old Technology.

"And now, gentlemen of the graduating class, the time has come when you are to pass out into the great world with the hall-mark of the Institute's approval. See that under all circumstances the metal rings true. If your ears have been properly attuned during the past year, you cannot fail to have heard something of what it really means to be a graduate of this Institute—what it means, not only in the standards of professional honor and skill that you are expected to maintain, but in the limitless demands upon your spirit of self-sacrifice. Yours is the first class to graduate in the second half century of the Institute's history and it

may be that you will feel that the New Technology begins with you. If this is so, it will fall to you to set the standard for your successors and to make it evident to the world that the new has lost nothing of what was the best in the spirit of the old. Your training here will give you splendid opportunities of usefulness, not only to yourselves but to others. Do not neglect the claims of public duty.

"Whether you are Massachusetts men or not, always remember that you owe much to this grand old Commonwealth, which has contributed largely to your education, and, I hope, breathed into you something of its fine spirit. Carry its great traditions out into the world and go forth strong in the assurance of sympathy and of interest from all who have watched your progress during the years that you have been within these walls, and of the kindly welcome and generous help that you may count upon everywhere from any one of the ten thousand alumni of this Institute now scattered throughout the world. The fact that you have passed successfully through the severe ordeal of the Institute's course proves that you have moral and intellectual qualities that should stand you in good stead everywhere. If you are to be really effective in the world a long struggle still lies before you and in that struggle, Corporation, Faculty and alumni unite with me in wishing you all success."

The conferring of degrees was the final exercise in the hall. Taking a prominent part in the exercises was Kanezo Goto of Tokyo, Japan. Goto is a lieutenant in the imperial Japanese navy and has seen active service in the war between Russia and Japan. Goto was stationed on the flagship during the battle of the Sea of Japan.

At Technology Goto's thesis was "The Design of a Curtis Steam Turbine." Before coming to the Institute he received the degree of mechanical engineer from the Imperial Polytechnic Institute. He is also a graduate of the engineering college, Tokyo, Japan.

The degrees conferred were as follows: Doctor of philosophy, 1; doctor of engineering, 1; master of science, 20; bachelor of science—civil engineering, 46; mechanical engineering, 49; mining engineering and metallurgy, 17; architecture, 10; chemistry, 12; electrical engineering, 49, biology, 1; physics, 1; general science, 2; chemical engineering, 19; sanitary engineering, 15; naval architecture and marine engineering, 6; electro-chemistry, 5.

HUNTINGTON HALL FRIEZE RESTORED

Decorations entirely by Technology students are said to have no parallel in the history of such work—Five classes contributed

The frieze of Huntington Hall, which the architectural department undertook to restore some five or six years ago, has now been completed. The spectator can hardly credit the statement that the work has been done entirely by the students of the department. Although the work has been divided up among many individuals, there is a remarkable uniformity about the treatment and drawing of the different subjects. The frieze now presents a series of thirty-one decorative panels done by twenty-eight students, the figures in the sketches being life size. They vary in width from seven feet to nearly twelve feet some of them representing single figures and others large groups.

The history of the panel decorations in Huntington Hall is an interesting one. The old frieze was ordered in 1870, and was drawn by Paul Nefflen, an artist born in Würtemberg. In 1898, during some improvements in the hall, the original pictures were painted or washed out, and for a number of years the panels remained empty.

In 1905 a plan was formed for restoring the decoration, it being suggested that the work might be done by the students themselves. For the past six years, each member of the succeeding fifth year class in architecture has availed himself of the opportunity of furnishing one of the panels. It should also be mentioned that the "landscape architecture" panel was supplied by a young woman student, Miss M. K. Babcock. The complete list is as follows:

South wall (which the audience faces)—Chemistry, W. B. Kirby; mining engineering, J. A. Kane; mechanical engineering, F. Nickerson; the potter, A. H. Jacobs; seal of Technology, H. W. Rowe and M. H. Goldstein; sculpture, George M. Magee; surveying, L. C. Clark, Jr., and F. M. Chace; the

miner, J. McF. Baker; architecture, A. N. Rebori; electrical engineering, C. L. Pitkin.

West wall—The carpenter, F. A. Burton; commerce, K. E. Carpenter; building, R. I. Batchelder; weaving, F. A. Burton; free-hand drawing, C. F. Baker; ship building, K. E. Carpenter; iron casting, J. F. Mohn.

North wall (back of the hall)—Indian, J. F. Alter; steel ship building, R. Kibbey; the two spandrils, A. F. Menke; research, E. I. Williams; the Puritan, J. F. Alter.

East wall—Fine casting, W. F. Dolke, Jr.; concrete mixing, C. C. Ford; landscape architecture, Miss M. K. Babcock; fisheries, W. H. Davis; glass blowing, C. C. Ford; shoe making, J. H. Scarff; the potter, K. E. Carpenter.

Technology Suite at the New York Chemists Club

It will interest Tech men to know that chemists of New York have just completed a new club house on 41st Street, just back of Hotel Belmont. It is an eleven-story structure, the lower portion being devoted to the social side of the club and the upper stories for analytical, commercial and research work. The point of particular interest to Tech men is the fact that the club contains a Technology suite, the funds for which were contributed by Institute men. David Wesson, '83, 26 East 29th Street, New York City, is chairman of the M. I. T. committee. The other educational institutions represented are Harvard, German Universities, Columbia, Princeton, New York University, Yale, University of Pennsylvania, Swiss Universities, Cornell, University of Michigan, Johns Hopkins, British Universities, College of the City of New York, University of Virginia, University of Tokyo, and Western Universities.

Dr. William T. Sedgwick, professor of biology in the Massachusetts Institute of Technology, gave the commencement address at the Worcester Polytechnic Institute on "Science and the State."

GIFT OF $10,000 FOR SUMMER SCHOOL CAMP

The Institute has recieved a check for $10,000 from Charles W. Eaton, '85, for the purpose of constructing permanent buildings for the summer school of civil engineering at Gardner Lake near East Machias, Me. Mr. Eaton who took the course in civil engineering is well acquainted with the needs of the department as he was for a time an instructor at the Institute soon after leaving Technology. He is now a dredging contractor in the work of improving harbors, having recently finished a large contract in Porto Rico. Another recent work was the dredging of the new harbor for the Danish government in the Lesser Antilles. Mr. Eaton is a good friend to the Institute, realizing the value his education has been to him. His previous gift was a loan scholarship which is so arranged that the money can be used in a quiet way without even the necessity of applying for it. The fund is placed in the hands of a member of the faculty in whose judgment he has the utmost confidence.

Newton Scholarship Fund

Salmon W. Wilder, '91, chairman of the Newton Technology scholarship committee, in an address before the Newton High School recently announced the establishment of a scholarship at the Institute of Technology to be awarded to a pupil of that school. The scholarship provides the tuition fee for one year at the Institute. The award of this scholarship is to be made by the school committee of the city of Newton on the basis of the general merit and promise of the student. This scholarship is intended to be a distinction which shall be attractive to any young man preparing for the Institute and it is to be independent of pecuniary need. The recipient may, however, at his option retain the title without the grant.

CLASS DAY EXERCISES

At the class day exercises held June 5, a handsome copy of the Technology seal, executed in bronze by Bela L. Pratt, was presented to the Institute, by the class of 1911. It is of heroic size and follows closely the official seal of the Institute, differing, however, in some minor parts. The seal was presented by W. C. Salisbury, of Chicago. Irving W. Wilson of Bloomington, Ill., class statistician, stated among other things that the average age of the class on entering the Institute was eighteen years and eleven months, and at graduation, twenty-three years and eight months. The average weight of the class is 151 pounds; height five feet nine inches. The amount spent for tuition was approximately $250,000. The average expense of the members of the class from September to June, $775, making the amount spent in Boston by the class of 1911, $1,100,000. Donald R. Stevens of Brookline, was president of the class and Theodore D. Parker of Allston, first marshal. Peter D. White of New York City was gift orator; the class history was read by R. H. Ranger of Indianapolis, Ind., and O. B. Denison of South Framingham was class prophet.

Tech Night at the Pops

There was much merriment and good feeling at Symphony Hall on the evening of June 6, the occasion of the annual Tech Night at the Pops. The number of Tech men on the floor was not as large as usual but the galleries were crowded with friends of the alumni. Many of the classes held dinners previous to the concert, and marched to the hall in a body.

The class of 1911, led by Pres. Donald R. Stevens, which arrived soon after eight o'clock, was greeted with vociferous cheering and was presented with its alumni banner by President Noyes of the Alumni Association.

TEXT OF THE TECHNOLOGY BILL

Following is the full text of the resolve appropriating $100,000 a year to the Institute from the treasury of the Commonwealth, for a period of ten years:

Resolved, That there shall annually be paid from the treasury of the Commonwealth to the Massachusetts Institute of Technology, for the term of ten years, beginning the first day of January in the year nineteen hundred and twelve, the sum of one hundred thousand dollars, to be expended under the direction of the Corporation of said Institute for the general purposes of the Institute: *provided*, *however*, that the payment for the year nineteen hundred and seventeen and for the four following years shall be conditioned upon the presentation of satisfactory evidence to the Governor and Council that the said Massachusetts Institute of Technology has received, by bequest or gift from other sources, the sum of one million dollars in addition to all the funds held by it on the day of the approval of this resolve. In consideration of the said payments and during the continuance thereof, the Massachusetts Institute of Technology shall maintain eighty free scholarships to be granted by the board of education to residents, or minor children of residents of Massachusetts who, upon examination conducted under such rules and regulations as the President of the said Institute may prescribe, shall be found to possess the qualifications fixed for the admission of students to the Institute. Two such scholarships shall be available annually for properly qualified candidates from each senatorial district, but if there be less than two properly qualified candidates in any senatorial district, such number of scholarships, less in amount than two from each district, may then be distributed by the board of education among the other senatorial districts. Candidates for these scholarships shall make application to the board of education before the first day of July in each year, and shall forward to that board the approval in writing of the senator from the district in which the candidate resides. In awarding the scholarships preference shall be given to properly qualified candidates who are otherwise unable to bear the expense of tuition.

All acts and resolves and parts of acts and resolves heretofore passed authorizing the annual appropriation of funds by the Commonwealth for the maintenance of free or state scholarships in the Massachusetts Institute of Technology, or prescribing the conditions under which such scholarships shall be awarded, are hereby repealed.

The Massachusetts Institute of Technology shall transmit each year copies of the annual report of its President to the general court.

The eighty half-scholarships now in force, as shown by the records of the Massachusetts Institute of Technology, shall continue in full force and effect until the end of the course for which they were given, after which time all future scholarships shall be filled under the regulations and conditions herein prescribed. [*Approved May 20, 1911.*]

To Purify New York Harbor

The report of Col. William M. Black, Engineering Corps, U. S. A., and Prof. Earle B. Phelps, '99, of the Massachusetts Institute of Technology, who, as a special commission for the Estimate Board of New York City, have investigated the pollution of harbor waters by sewage, has been submitted, and as a result of its recommendations the Estimate Board has empowered the mayor to appoint a committee of five city engineers to establish a standard of water purity on a firmer basis of fact than now exists. The committee is to submit plans also for the rearrangement of sewer exits wherever this may be found necessary.

Colonel Black and Professor Phelps report that their investigations have convinced them that the amount of dissolved oxygen in the harbor waters, which furnishes the most satisfactory criterion of the purity of these waters, should not be drawn on to an extent which shall reduce it below 70 per cent. of the full saturation value. They estimate that if sewage could be concentrated at the Narrows and Throgs Neck, this standard of purity could be maintained until such a time as the population of the entire district shall reach 7.4 millions.

ADDRESSES WANTED

The alumni office has no addresses for the names below. Will the readers of the REVIEW *kindly furnish any they may know.*

Daniel Wheelock Willard, '70.—James Austin Knapp, '75.—Francis T. Sargent, '75.—Harry H. Campbell, '79.—Loring R. Miller, '80.—Frank C. Morrison, '82.—Charles Lincoln Burlingham, '86.—Harry Baker Merriman, '86.—Elwood Justin Wilson, '86.—Fred Ropes Young, '86.—John Stites Ray, '88.—Charles Henry Warner, '89.—Francis William Dunbar, '90.—George Warren Favor, '91.—Clement March, '91.—George Albert Merrill, '92.—Hamilton Otis, '92.—Russell Selfridge, '92.—Nathaniel Rutherford Craighill, '93.—Nathan Coleman Winslow Chapman, '94.—Herbert Edward Johnson, '94.—George Owen, '94.—Allan Percy Brown, '95.—John Winfield Cooke, '95.—George Reuben Howarth, '95.—Andrew Jeffries Logan, '95.—Charles Thomas Bramhall, '97.—John Watson FitzGerald, '97.—Warren Augustus Rooke, '97.—George Kellogg Newbury, '98.—William Graves Smith, '98.—John Howard Adams, '99.—John Albert Flemings, '99.—Gardner Manning Gale, '99.—Harry Wales Goldthwaite, '99.—Lee Rosenberg Loveman, '99.—Carl Leon Morgan, '99.—Warren Adams Edson, '00.—William Gardner Pigeon, '00.—Eugene Stillman Foljambe, '01.—Alberto Primitivo Gonzales, '01.—Lewis Winslow Horne, '01.—Otto Gerhard Luyties, '01.—Leslie Eaton Merrill, '01.—Sumner Ives Smith, '01.—Fred Bibber Webster, '01.—Lester Clark Hammond, '02.—Pierre Barbeau Pendill, '02.—Wade Lyndon Wetmore, '02.—Herbert Clemens Burdick, '03.—Charles Francis Gardner, '03.—Frank Johnson, '03.—John Larrabee Jones, '03.—Harold Osborn, '03.—Horace Gardner Simpson, '03.—Irving Ellwood Adams, '04.—John Winfrid Ager, '04.—George Martin Bates, '04.—Allan Seymour Courtney, '04.—Henry Philkins Drake, '04.—Charles Ashley Hardy, '04.—Henry Levine Lyman, '04.—William Donaldson Murray, '04.—Hersu Schapira, '04.—Frank Joseph Severy, '04.—Theodore William Steidemann, '04.—Charles Francis Underhill, '04.—Thomas Breckinridge Cabell, '05.—Edward Chester Grant, '05.—

Elliott Lum, '05.—Harold Carlyle Mitchell, '05.—Lovell Hallet Parker, '05.—Leon Murray Pease, '05.—Arthur Morton Cheney, '06.—Angelo Tilton Heywood, '06.—Charles McKay Huntington, '06.—Hans Otto Carl Isenberg, '06.—John Edward Murphy, '06.—Clarence Brewster Powell, '06.—Nestor Manuel Seiglie, '06.—Louis Arnett Thompson, '06.—Walter Hayward Trask, Jr., '06.—Juan Francisco Urquidi, '06.—John Hanger Link, '07.—Kenneth Camm Boush, '08.—Utar James Nicholas, '08.—Edward Michael Savage, '08.—Milton Stanley Clark, '09.—Chauncey Howard Crawford, '09.—Valerio Masjoan, '09.—Richard Frederick Goodwin, '10.

Changes in the Faculty

Announcement was made the latter part of June that Prof. Gaetano Lanza, who for twenty-eight years has been in charge of the mechanical engineering department of the Institute, would remain professor emeritus, and that Prof. Edward F. Miller, '86, of the department of mechanical engineering would be acting head of the department.

Professor Miller has conducted the course in practical steam engineering for twenty years. He has been engaged in many steam problems, and is the author of a number of technical book- and articles in engineering papers. The Corporation also announns ces the following promotions: Associate Professor G. N. Lewis, appointed professor of physico-chemical research; Associate Professor E. B. Wilson, professor of mathematics; Selskar M. Gunn, assistant professor of biology and public health; William T. Hall, assistant professor of chemistry; R. S. Williams, assistant professor of chemistry; W. Felton Brown, assistant professor of drawing; Harold A. Everett, assistant professor of naval architecture; Assistant F. L. Hunt, instructor of physics; Assistant F. G. Perry, instructor of electrical engineering; Assistant J. J. Eames and Assistant W. H. Jones, instructors of mechanical engineering; Assistant E. L. Connolly, instructor of inorganic chemistry; Assistant Ludwig Rosenstein, instructor of theoretical chemistry; Assistant R. E. Gegenheimer, instructor of industrial chemistry; Walter W. King, from assistant to instructor in physics.

LOCAL ALUMNI ASSOCIATIONS

Great Interest in the New Technology Club of Japan—Technology Club of New Hampshire formed at Manchester—New York Club forging steadily ahead—New Officers of Northwestern Association.

TECHNOLOGY ASSOCIATION OF JAPAN.—I thought the REVIEW would be interested in learning that the first meeting of the Technology men of Japan was held at the Kojunsha Club, Tokyo, on April 13, 1911. The occasion was a dinner given for me by Dr. Takuma Dan, '78, and Stejiro Fukuzawa, '88, to which a number of other Technology men were invited. Everyone seemed very much interested in what I had to tell them of Technology and Technology's plans, so much so that at the conclusion of the dinner it was voted to form the Tech-

nology Association of Japan. Doctor Dan was chosen secretary and treasurer of the new organization and it was decided to start active work with the view of increasing the influence of the Institute in the Orient.

The men present included, Doctor Dan, '78, director of the great Mitsui enterprises in charge of their mining interests, which are the most extensive of any in Japan; Fukuzawa, '88, who not only publishes the *Jiji Shimpo*, one of the most important newspapers of the country but, with his brother, owns and conducts the Keio University, a private institution founded by his father, which boasts of over four thousand students; Heiichiro Maki, '93, well known for having built the first electric railway in Japan, as well as having promoted other important enterprises and Eiichiro Honma, '74, who went to the Institute in 1870 before there was a transcontinental railroad, and who, therefore, had to make the journey by way of San Francisco and Panama, being over fifty days in transit; Viscount Torii, '84, who looks after Technology's interests in the upper house of Parliament, was unable at the last minute to come to the dinner but sent his regrets, as did a number of others.

Frederick W. McIntyre, '02, of the Western Electric Company and T. I. Chapman, '94, of the Standard Oil Company, were the only two Americans besides myself who were present. I have never been to a Technology dinner where more genuine enthusiasm was shown. This argues well for the future success of the Technology Association of Japan.—*Jasper Whiting*, '89.

Technology Association of New Hampshire.—At a meeting of Technology alumni living in the vicinity of Manchester, N. H., June 27, it was voted to form a Technology association of New Hampshire and the following officers were elected: A. W. Thompson, '96, president, N. S. Bean, '94, vice-president; G. S. Gould, '07, secretary-treasurer; A. Fisher, Jr., '06, chairman of the executive committee. On this committee are the officers and M. L. Bullard. Every man who ever went to Tech is invited to notify G. S. Gould, secretary and treasurer, superintendent of the counter factory of the W. H. McElwain Company of Manchester.

The meeting was held at the Intervale Country Club, the following men being present: Arnott, '75, Robbins, '86, Clough, '91, Bean, '94, Thompson, '96, Gould, '03, Roberts, '04, Thomp-

son, '04, Thompson, '05, Fisher, '06, Davol, '07, Gould, '07, Robbins, '07, Albro, '08, Belcher, '08, Collins, '08, Hall, '08, Bullard, '09, Caldwell, '09, Reynolds, '09, Clough, '10, Lord, '10, and Lawrence, '10. In the company, nine are married, fourteen are single, three are soon to become benedicts and five are fathers.

The chairman of the executive committee was authorized to receive subscriptions from corporations and public-spirited citizens of the state of New Hampshire to raise annually $2,500 to be used by the principal of the high school of Manchester to send the brightest high school graduate in the state to some college for three years and to M. I. T. for two years following, $500 to be used by each man each year for five years for this purpose. There are to be two meetings each year.—*G. S. Gould*, '07, *Secretary-Treasurer, 102 Webster Street, Manchester, N. H.*

Technology Club of New York.—The second anniversary of occupancy of the attractive club house at 17 Gramercy Park was celebrated Friday evening, May 19, by a smoker night arranged by Mr. Howes, '03, at which a goodly gathering of Tech men enjoyed some rollicking songs, dances and banjo and guitar music furnished by irrepressible black boys. About fifty men were at dinner and by eight o'clock the evening's program began. Doctor Maclaurin sent a letter of congratulation and good wishes and regretted his inability to attend. After about an hour of jollity and an opportunity to absorb the beer and lemonade and refill pipes, the president of the club, Mr. King, made a birthday address referring to the opportunities now afforded by the club, its popularity for class dinners, and the plans contemplated for improvement and development requiring only the co-operation of New York men to avail themselves of the advantages of the club and unite in the general movement of the alumni in creating a New Technology.

Within a week news reached the club of the signing of the bill appropriating the money desired by the Institute from the State and of Mr. duPont's generous gift, and forthwith a message of congratulation was sent to him signed by a large number of the members of the club.

The club also received a cordial but late invitation from the Philadelphia Club to play ball at its field day, May 27, but we were obliged to decline as so many of our men had planned to be out of town over Decoration Day. We still look forward to an

opportunity to touch up the "Phillies" on their own grounds. Training quarters have been established in the out-of-door dining room, now reopened, which affords the pleasantest place in New York for summer time repasts. The chairman of the house committee is furnishing such delectable meals in the aforesaid place, however, that we fear our men will put on so much weight that Philadelphia will have a walk-over.

The board of governors is already anticipating an unusual and successful annual banquet next year. The date has been announced as January 21, 1912. VanR. Lansingh has been made chairman of the committee. It is to be called the New York State dinner of Tech men.

The nominating committee for next year has already been appointed, and consists of Walter B. Trowbridge, '92, chairman; G. U. G. Holman, '86; J. Parker B. Fiske, '89; C. A. Meade, '94, John P. Bacon, '97, Allston Sargeant, '98, G. I. Rhodes, '05, and C. F. Shaffer, '10. This committee will have seven months to receive suggestions in regard to candidates for election to the board of governors at the annual meeting, February 4, 1912.

George W. Kittredge, '77, is chairman of our committee to suggest names of candidates for term membership on the Corporation and also for officers of the Alumni Association.

F. C. Schmitz, '95, chairman of the membership committee, announced that up to June 7, 522 members had been elected.—*Walter Large, '79, Secretary, 15 William St., New York, N. Y.*

Northwestern Association of the M. I. T.—The most important recent event was the annual meeting of the association which took place at the South Shore Country Club, June 17. Notwithstanding the inclement weather, there was a good crowd out and these were fully repaid as it cleared up finely in the afternoon. The main feature of the afternoon was a ball game between the "Dressmakers" on one side, captained by Dick Schmidt, '87, while the "Drunken Sailors" had for their chieftain Lonsdale Green, '86. It is to be understood at the beginning that this was not baseball; it was the spectacular game known as indoor-outdoor baseball, and the game in question was most momentous as it was played for the championship of the Northwestern Association.

There was much feeling in regard to the decisions of the umpire

and the under-current of wrath was not confined to any particular side. It is recorded that Green's side won, although the score was very close with twenty-three home runs which were made in the last inning before the scorer's arm got tired. Banash and Sturm were pitchers for the "Dressmakers" and both were knocked out of the box. We never did learn who was the pitcher for the "Intoxicated Tars," but have an idea that he was a "ringer." All the old members of the association were out and a great many new ones. The game was well worth the price of admission.

The annual election which took place at this meeting resulted in the following board of officers: R. E. Schmidt, '87, president; Lonsdale Green, '86, vice-president; John M. Frank, '07, and Kenneth Lockett, '02, executive committee. The secretary-treasurer is elected for two years so that the present incumbent has still another year to serve.

At the meeting, Copeland, '76, who was present at the Congress of Technology, described the condition of affairs at the Institute and stated that never in the history of Technology had it been in such fine condition for carrying on its work and expanding its usefulness.

The association has just issued a new directory of its members which will be found very useful.—*Meyer J. Sturm*, '96, *Secretary, S. 704, 84 La Salle Street, Chicago, Ill.*

Pittsburg Technology Association.—The American Society for the Promotion of Engineering Education holds their yearly meeting in Pittsburg during the week beginning June 26. It is proposed to hold a "College Reception" in the foyer of Carnegie Institute the evening of Thursday, June 29, where the alumni or undergraduates from the various colleges may have a reunion to meet the professors of their respective institutions. There is great hope of having a goodly representation of Technology men for this occasion.

The friends of Waldso Turner, '01, former secretary-treasurer of the Pittsburg Alumni Association, will be glad to know that he is again able to be about after a protracted illness of over three months. Mr. Turner is general manager of the Iron City Engineering Co., Pittsburg, Pa.

On Thursday, May 25, Luther K. Yoder, M. I. T. '95, with the Jones & Laughlin Steel Co., was a guest at luncheon in "The House" of the Marguerette Morrison School, in connection

with the Carnegie Technical Schools. Following the luncheon Mr. Yoder lectured to the junior class on how the methods of modern scientific management in the business world can be applied to the management of the home, with special relation to household accounts. This lecture was a part of the course in the distribution of income for which the class has been scheduled during the year.

Review of Work of Pittsburg Alumni Association for Season 1910–1911.—The association has a membership of 160, comprising all graduates and special students of Tech in Pittsburg and vicinity, covering a radius of thirty miles. The association has passed through a successful season both socially and financially. The program during the past year consisted of two smokers and the annual dinner. The smokers were held during May and November, 1910. The May smoker provided a talk by George R. Wallace, '81, on "The Commission Form of Government for Cities." Since Pittsburg has finally secured a commission form of government, it is pleasing to report that our association was active in the movement to secure this much-needed and desired legislation for the city.

The November smoker was a grand jollification meeting of "Tech boys" and our congenial past president, Sumner B. Ely, '92, officiated as "Keller the Magician" and no better performance could have been wished for.

Our Guarantor's Association continues to be the mainstay of our financial success, since our regular yearly dues are but $1.00, and has provided funds whereby the association is able to give the smokers entirely free of charge. Luncheon and "the things that go with it" are always on hand, and our plans have worked so successfully that we are glad to recommend the plan to other associations.

Our annual dinner was held on the memorable night of April 11th. It was a grand love feast, and marked the beginning of a new era in Technology interest everywhere.

Sumner B. Ely, '92, was an honor guest at the banquet of the Worcester Polytechnic Institute held at the Fort Pitt Hotel, Pittsburg, June 1. Mr. Ely spoke of the allied interests in technical education and the very friendly feeling existing between the sister institutions.—*L. K. Yoder, Secretary-Treasurer, 634, Maryland Ave., Pittsburg, Pa.*

TECHNOLOGY CLUB OF ROCHESTER.—Although the REVIEW published a short article in the May number concerning the dinner of the Rochester Club on April 11, the secretary believes that a little further information on the same subject will not be amiss. The local papers, particularly the Rochester *Democrat and Chronicle*, treated the club very kindly, publishing two articles, one on Sunday, April 9, of over half a column, and the other on Wednesday, April 12, of a column. The articles were considered as local news and referred principally to the dinner of the club.

The attendance was the largest we have ever had, the following men being present: F. O. Rich, '13, M. Lyman, '90, O. R. Adams, '06, C. C. Culver, '96, A. F. Sulzer, '01, Eisenhart, '07, E. H. Packard, '07, W. G. Bent, '05, F. A. Cole, '91, J. F. Ancona, '03, F. W. Lovejoy, '94, A. S. Crocker, '97, H. H. Tozier, '96, H. O. Stewart, '09, M. Hogle, '01, O. K. Foote, '84, B. C. Hopeman, '00, W. E. Hoyt, '68, H. Alserly, '09, C. F. Wray, '98, E. M. Hawkins, '98, J. C. Dryer, '99, L. F. Myers, '03, V. E. Lacy, '99, Dr. Rush Rhees and Roland B. Woodward, secretary of the Rochester Chamber of Commerce, being guests of the club.

The club was very fortunate in having Doctor Rhees for a guest, for in addition to being president of the University of Rochester, and therefore interested in the Congress of Technology, Doctor Rhees has an engaging personality and is a well-rounded and finished after-dinner speaker. Speaking without notes, he held the attention of his audience every second. A number of facts were presented in a way that probably the average Institute man would not think of and the Doctor's arguments on these points were very conclusive.

The subject was on technical education, references to two German schools being used to illustrate two different ideas of developing the student; the growth of technical education and the need of correlation of cultural studies or training. Doctor Rhees attributed the fame and success of Tech in a large measure to the services of men of broad cultural training such as Presidents Rogers and Walker. In conclusion he indicated that cultural training should increase engineering or technical efficiency.

Mr. Woodward's entertaining talk was concerning the duty of technically trained men to interest themselves in the development of the communities in which they live. Mr. Woodward has been

a vigorous worker along these lines and his service for the Rochester Chamber of Commerce is becoming well known.

The president, Mr. Hoyt, read several extracts from a letter he had received from his classmate, Professor Richards, that were very interesting.

The dinner was most successful from all standpoints and the club members think that they assisted as far as they were able on such short notice to celebrate the fiftieth anniversary of Technology. Mr. Lovejoy is to be congratulated on the fine dinner arrangements. No meetings are scheduled at this date and there is no news of importance, but unquestionably some gathering will be arranged during the summer or early fall.—*J. F. Ancona* '03, *Secretary-Treasurer, 190 Birr Street, Rochester, N. Y.*

Technology Club of Puget Sound.—We have had no meeting of the club since April 11, at the time of the Congress of Technology. We expect to have a luncheon, however, on Saturday, July 8, in honor of ex-Governor Draper, '78, who is touring in this part of the country. Matters will be somewhat quiet during the summer but in September there will be a meeting for the election of officers with some kind of entertainment. The first active year of the association has been on the whole a very successful one and the interest appears to be sufficiently awakened to insure a profitable season for 1911 and 1912.—*L. A. Wallon*, '04, *Secretary, The Seattle Electric Company, Seattle, Washington.*

The Cincinnati M. I. T. Club.—In the May number of the Technology Review the regular weekly luncheon of our club was listed as Thursday, which is incorrect. Please take notice that Tuesday is the day and any Tech man in Cinncinnati on that day will be welcomed with open arms.

All our attention is now being given to the summer outing which will probably have taken place by the time this issue is published. These festivities are becoming, more and more, the events to be looked forward to with fond anticipation. It is hoped that this year's baseball game will surpass the famous contest of last year. No spectator will ever forget that thrilling experience. Our only trouble is to secure an efficient and durable umpire. The increasing numbers of the younger members in the club is serving to put new life into the organization, which had to a considerable extent become a sort of "ancient and honorable" affair. With

the addition of the younger element the interest in the Institute has been growing and this has been helped by the monthly news coming to us through the REVIEW.

It will be desirable, during the coming season, to make efforts to interest young men preparing for college in the advantages of Technology. It is proposed to start the winter season with a series of social evening meetings, one feature of which will be the presence of ladies, a feature of which we are very proud.

At a recent minstrel show by the employees of the Proctor & Gamble Company, Ray Allen, '09, sometime of the Tech show, distinguished himself again as one of the most humorous of end men.—*Stewart R. Miller, '07, Secretary, 3366 Morrison Avenue, Clifton, Cincinnati, Ohio.*

WOMEN'S ASSOCIATION OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY.—The last business meeting and tea of the season was held in the Margaret Cheney Room, Friday, May 5; Miss Kenney and Miss Manning hostesses. Miss Dodd, acting president, presided at the business meeting. Miss Dodd outlined for those present the responsibilities which now devolve upon the association owing to the recent death of the honored president, Ellen H. Richards. The organization can no longer be content with social gatherings only. The members and indeed all former women students are urged to take a greater interest in the activities of the association.

Miss Susan Minns, recently appointed member of the Naples Table Association from the Massachusetts Institute of Technology, to succeed Mrs. Richards, gave an interesting account of the work of the association and of its recent meeting at Smith College. Mrs. Lord then gave some interesting personal impressions of Mrs. Richards and after active discussion of ways and means the meeting adjourned.—*Mildred E. Blodgett, '07, Corresponding Secretary, 72 Ashford Street, Allston, Mass.; Elizabeth B. Babcock, '09, Recording Secretary, 102 Crawford Street, Roxbury, Mass.*

WASHINGTON SOCIETY OF THE M. I. T.—The Washington Society of the M. I. T. held its twelfth annual banquet on the seventeenth of April at the Arlington Hotel, with forty-four present. After the dinner, which proved to be a good one, Dr. A. A. Noyes, '86, president of the Alumni Association, gave us a résumé of the late happenings in Boston. Rear Adm. E. V.

Endicott, U. S. N., retired, who had been a guest at the Congress of Technology the week before, spoke next; then Mr. Melville Church, president of the Patent Law Association of Washington; and finally Prof. Henry E. Clifford, '86, of Harvard University. All the speeches were short and to the point. Each speaker had a message, and each message reached every man present. The needs of Technology that are not met by the present resources were especially emphasized.

On Sunday, May 21, the society participated in an engineers' excursion to the new hydro-electric plant at McCall's Ferry, Pa. Our society, the Washington and Baltimore sections of the A. I. E. E., Washington Society of Engineers, and the Engineers' Club of Baltimore, were each represented by a delegation, the total attendance reaching 175. A special train was furnished for the trip. On arrival at the plant at noon, a box lunch was served from the baggage compartment. The day was warm and there was a rush for the barrels full of cracked ice and cold bottles of ginger ale and soda. The officials of the power company acted as guides, and everybody saw everything. They even took us into the "Chamber of Horrors," where the live 70,000-volt bus bars are located. The plant will have an ultimate capacity of about 100,000 k.-w. Power is transmitted at 70,000 volts to Baltimore, forty miles away. The dam is of concrete, sixty feet high and half a mile wide, backing up the river water for eleven miles. On account of the low head (fifty to sixty feet) the generators run at the comparatively low speed of 94 r. p. m., and as a result the fields of the 10,000-k.-w. machines are over twenty-seven feet in diameter.

At half past three, after we had walked miles and had asked yards of questions, the locomotive began to make a noise as if it were getting restless, so we climbed on board and were taken back home. It was a trip that was thoroughly enjoyed by all.—*D. G. Haynes, '09, Secretary, 312 Patent Office, Washington, D. C.*

Technology Club of Minnesota.—During the past year local alumni have showed a great deal of interest in the Minnesota Club and Technology in general. The club was organized in 1903 and has done very little since that time but hold annual dinners and meetings.

The enthusiasm shown at the recent Congress has even reached

us out here, however, and several of the members have taken an active interest in the work of the club, and their suggestions have proved very helpful to the officers.

As a result of this activity, literature has been placed in the architect's clubs of both St. Paul and Minneapolis, as well as in the public libraries of those cities. Steps are now being taken for holding an exhibit in the rooms of the Minneapolis Architects' Club of some of the work of Technology architectural students. The Twin City high schools have been supplied with literature and several names of prospective students have been received by the secretary.

During the past two years very strong "Technical Clubs" have been formed in Minneapolis high schools,—similar to the engineering societies at the Institute. These clubs hold frequent meetings which are addressed by local engineers and professors of the high schools and University of Minnesota. On Saturdays the club members usually visit some plant and during the winter the larger club, enrolling some ninety members, visited ten or twelve of these manufacturing establishments.

The local alumni held their annual banquet on April 11, a description of which was given in the May issue of the REVIEW. At that time steps were taken to hold regular dinners and lunches. A circular letter from the secretary on this subject received prompt attention and resulting letters were very gratifying. It was felt by the executive committee, however, that, owing to the proximity of the summer season and the consequent removal of many of the members to the surrounding country, that the plan should not be put into effect until September.

The club plans to work up the scheme of regular gatherings as strongly as is practicable, and everyone here is making "Publicity" the proposition for which he is working.—*Clifford C. Hield*, '10, *Secretary, 1674 Hennepin Ave., Minneapolis, Minn.*

SAINT LOUIS SOCIETY OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY.—This society had its first jollification since its organization at the Glen Echo Country Club, on Wednesday, May 24, in the shape of a cold spread at seven o'clock followed by refreshments on the piazza. It was a very hot night in town, but that only gave the boys a larger initial thirst and consequent greater capacity for enjoyment on their arrival. Those present

were H. B. Graham, '99, E. L. Barkhouse, '97, J. M. Perkins, '01, A. M. Holcombe, '04, W. W. Karnan, '08, E. L. Brown, '08, and R. E. Blankenbuehler, '09. After doing full justice to the entertainment provided by our host, E. A. Manny, 1887–8, we wound up the evening by all piling into Graham's invincible Oldsmobile, three deep and returning to town in as decorous a manner as is customary.

The Friday lunches at the St. Louis Lunch Room, Fourth and Locust streets, will be continued for the present, and any visiting Technology man may look for a welcome there between 12.30 and 1.00 p. m. any Friday.—*Amasa M. Holcombe,* '04, *Secretary-Treasurer, 510 Pine St., St. Louis, Mo.*

Doctor Daly on the Canadian Geological Survey

Dr. Reginald Daly of the Institute of Technology has been engaged by the Canadian geological survey to do special research work in Canada this summer. Doctor Daly will take charge of a party which will begin the geological mapping of a cross-section of the Rocky Mountains, following the main line of the Canadian Pacific Railway, a task that will probably take ten years to complete. The first cross-section along the international boundary line was completed in coöperation with the United States geological survey three years ago. The work is of vital interest to geologists all over the world as throwing light on some of the basic problems of modern geology.

Doctor Dewey, Editor

The first issue of the *American Economic Review,* published by the American Economic Association and edited by Prof. Davis R. Dewey of the Institute, has recently made its appearance. This new quarterly which takes the place of the *Economic Bulletin,* covers a wide range of thought and it is the aim of its editors to make the publication a craftsman's tool. In its last number about forty books were reviewed and there are two hundred and fifty entries of periodicals.

TECH MEN IN THE PUBLIC EYE

SELSKAR M. GUNN, '04, instructor in the Department of Biology and Public Health at the Institute, has been secured by the Milwaukee Bureau of Economy and Efficiency, the new economic board of the socialist administration, to take charge of the investigations of present health conditions and to work out a final reorganization of the health department. Mr. Gunn has obtained leave of absence from the Institute and will not return until September. He has been connected with the Boston Board of Health, the Iowa State University and the Iowa Board of Health. For two and a half years he served as health commissioner of Orange, N. J., and during his administration the death rate decreased from 16 to 13 per 1,000. Mr. Gunn is one of the editors of *Science Conspectus* published by the Society of Arts of the Institute.

CHARLES H. WOODBURY, N. A., '86, who is the subject of an article in a recent number of the *International Studio*, New York City, has few equals as a maker of water colors. His best-known works are pictures of the ocean in its varied moods. His best known picture entitled, "Mid-Ocean," created a profound impression when it was shown in New York a few years ago at the National Academy exhibition. After Mr. Woodbury was graduated from the Institute, he studied in Paris and Holland. He has many medals including one from the Paris Exposition in 1900, the Pan-American at Buffalo and the St. Louis Exposition. His home is near the village of Ogunquit, Me. In 1899 he was elected to membership in the Society of American Artists and in 1897 received full academic honors of the National Academy of Design.

MORRIS KNOWLES, '91, formerly chief engineeer of the Bureau of Filtration of Pittsburg, has been appointed director of the department of sanitary engineering and public health in the School of Engineering at the University of Pittsburg. This course will be laid out under the direction of Mr. Knowles to co-operate with the Medical School of the University and the departments of health of the city and state. Under the co-operative system in operation at the School of Engineering, the students will receive

a year's practical work during their course. It is proposed under the direction of Mr. Knowles to develop one of the most advanced courses in sanitation and public health in the country.

WILLIAM C. CUSHING, '87, has recently been elected president of the American Railway, Engineering and Maintenance of Way Association. After leaving the Institute he entered the service of the Pennsylvania Railroad and has served in various capacities on that road up to the present time. He has been engineer of maintenance of way on the Cincinnati & Muskingum Valley Railway and the Indianapolis and Pittsburg divisions of the Pennsylvania lines. In 1901 he was made superintendent of the Pittsburg division and a year later was appointed superintendent of the eastern division. In 1903 he was promoted to his present position, that of chief engineer of the southwest system. Mr. Cushing served in 1910 as a delegate to the International Railway Congress. He is a member of the American Society of Civil Engineers, the American Society for Testing Materials, the International Society for Testing Materials and the Société des Ingénieurs Civils of France.

GEORGE C. WHIPPLE, '89, of the firm of Hazen & Whipple, sanitary engineers of New York City, has accepted an appointment as professor of sanitary engineering at Harvard University, connected with the graduate school of applied science. Mr. Whipple is one of the most prominent sanitary engineers in the country and has a wide reputation as a lecturer and author on technical subjects. After leaving the Institute he became associated with Desmond Fitzgerald of the Boston Water Department and had charge of the biological laboratory at Chestnut Hill for eight years. During the latter part of that time he was consulting engineer of the city of Lynn. He went to Brooklyn in 1896 and established a laboratory there similar to the one he had been conducting in Boston. When Brooklyn became a part of Greater New York, Mr. Whipple had charge of the examination of the water supplies of the metropolis and his investigations led to the selection of the Catskill water supply which is now being used in that city. Mr. Whipple has also made thorough studies of the tidal conditions of the Hudson river and the sewage disposal in New York harbor, the effect of the sewage of Chicago on the water supply of St. Louis, the water supply of Jersey City, an investigation for the New Jersey state

sewerage commission of the disposal of wastes from gas works, of typhoid fever epidemics at Waterville and Augusta, Me., and Cleveland, and has published monographs on typhoid fever, pure water and other subjects related to sanitary engineering. For two years Mr. Whipple was a lecturer at the Massachusetts Institute of Technology and he has given lectures also at Dartmouth College and Columbia, Cornell, Lehigh and McGill universities. Since 1904 he has been consulting professor of water supply and sewage disposal at the Brooklyn Polytechnic Institute and has given occasional lectures and exercises there.

William J. Roberts, '91, has been appointed state highway commissioner of Washington, and will take up his duties immediately, with headquarters at Olympia. Previous to his appointment he was practicing as consulting engineer on municipal improvements, with an office at Medford, Wash. Since his graduation from the Massachusetts Institute of Technology in 1891 he has been engaged in a variety of municipal works, principally in the Northwest. This has included service as city engineer of Colfax, Wash., for three years, and later the design and supervision of construction of sewers and water-works systems for a number of small cities in that state and Idaho. During a part of this time he was also associate professor of civil engineering of the Washington Agricultural College and School of Science, and was sanitary engineer of the Washington State Board of Health.

Henry N. Atwood, '05, has astonished the country during the last month by his airship flights from Boston to New York and thence to Washington. His flight from Boston was so timed that he arrived in New Haven at the time of the Harvard-Yale boat race. His air-feat became the talk of the country, more particularly because of his daring flight over the sky scrapers of New York City, which has never before been attempted. Mr. Atwood is a pupil of the Wrights and is connected with the Burgess-Wright school at Squantum, Mass.

C. Howard Walker, '99, formerly of the department of design at the Boston Museum of Fine Arts, and a lecturer at the Institute of Technology, has recently been honored by election to associate membership in the National Academy of Design, New York, his membership representing architecture.

EARLE L. OVINGTON, '04, thrilled the people of Boston in June, when he made spectacular trips in his Blériot monoplane from the Waltham aviation field over the city of Boston, circling the state house and many public buildings. Ovington was a student of the aviation school at Pau, France, and is one of the most daring manipulators of the aeroplane in this country.

CARL P. POMEROY, '10, has been appointed bacteriologist of the city of Plainfield, N. J. Mr. Pomeroy was graduated from Bates College before coming to the Institute. He has been connected with the Board of Health of Lewiston, Maine. The Board of Health of Plainfield is now ready to take up research work which will be conducted by Mr. Pomeroy.

EMORY S. LAND, '07, has been assigned to the post of Bureau of Construction and Repair at Washington, D. C. After being graduated from the United States Naval Academy, Instructor Land took a two years' course at the Institute from which he was graduated in 1907 when he became assistant naval constructor in the New York navy yard.

CHIN YU WEN, '08, who holds the degree of bachelor of science from the Institute and subsequently took a master's degree at Technology, has recently received the degree of doctor of philosophy from Columbia University. He is to return to China to become the head of a new university which will be conducted along the lines of American educational institutions.

CECIL H. PEABODY, '77, in charge of the department of naval architecture and marine engineering at the Institute, has been selected as a delegate to the jubilee meeting of the naval architects of Great Britain from the American Society of Naval Architects and Marine Engineers of which he is a member of the council. The meetings are to be held in London, July 3–8, and will constitute virtually an international congress, as invitations are extended to the societies of the United States, Germany, France, Italy, and Japan.

WILLIAM T. CARPENTER, '07, has recently been appointed general bacteriologist of the Cincinnati filtration plant.

PUBLICATIONS OF THE INSTITUTE STAFF

CHARLES W. BERRY. The Temperature. Entropy Diagram. John Wiley & Sons, New York. p. 393. 12mo. 5 x 7. Illustrations 127 and Tables. First edition. January, 1905. Second Edition. October, 1908. Third edition. January, 1911.

ROBERT P. BIGELOW. A Comparison of the Sense-Organs in Medusae of the Family Pelagidae. *Journal of Experimental Zoölogy.* Vol. 9, No. 4. pp. 751–785. Illustrated. December, 1910.

WILLIAM C. BRAY and F. L. HUNT. The Conductance of Aqueous Solutions of Sodium Chloride, Hydrochloric Acid and their Mixtures. *The Journal of the American Chemical Society* Vol. 33, p. 781. (pp. 14.)

C. B. BREED. American Civil Engineer's Pocket Book, Section 2, on Surveying and Railroad Location. New York. p. 1380. Size of Vol. 12mo.

EDWARD E. BUGBEE. Notes on Fire Assaying. (Mincograph Note Bound.) Boston, Mass. p. 92. Size 8 x 10½. February, 1911.

LOUIS DERR. Double-coated Plates for Tourists. A short paper giving a comparison of plates and films to the advantage of the former. *American Annual of Photography.* Vol. 25, p. 189. 1911.

SIDNEY GUNN. The Appointment, Promotion and Removal of Officers of Instruction. *Science.* New York. Vol. XXXIII., p. 727. May 12, 1911.

CARLE R. HAYWARD and WILLIAM T. HALL. "Metallurgy," a translation from the German of Borchers' "Huttenwesch." Wylie & Sons, New York, p. 271. Size 8vo. Illustrated.

H. O. HOFMAN and C. Y. WEN. Heats of Formation of Some Ferro-Calsic Silicates. *Transactions American Institute of Mining Engineers.* Vol. XLI., 1910.

H. O. Hofman. The Metallurgy of Lead in 1910. *Engineering and Mining Journal.* Vol. XCI., p. 48. 1911.

Franklin L. Hunt. The Conductance and Ionization of Certain Salts at 18° and 25°. *Journal of the American Chemical Society.* Vol. 33, p. 795. (pp. 1.) June, 1911.

T. A. Jaggar, Jr. The Costa Rica Volcanoes and the Earthquakes of April 13 and May 4, 1910. *Journal of the Association of Engineering Societies.* Vol. XLVI., No. 2. February, 1911.

Ernest F. Langley. Les Travailleurs de la Mer par Victor Hugo. Abridged and Edited with Introduction and Notes. D. C. Heath & Co., Boston, Mass. Vol. 1, XVIII.,+306. Size 12mo. Illustrated, portrait and map. April 8, 1911.

G. N. Lewis and Arthur Edgar. The Equilibrium between Nitric Acid, Nitrous Acid, and Nitric Oxide. *The Journal of the American Chemical Society.* Vol. 33, p. 292. (pp. 7.) March, 1911.

G. N. Lewis and F. F. Rupert. The Potential of the Chlorine Electrode. *The Journal of the American Chemical Society.* Vol. 33, p. 299. (pp. 9.) March, 1911.

G. N. Lewis and Merle Randall. The Heat Content of the Various Forms of Sulphur. *The Journal of the American Chemical Society.* Vol. 33, p. 476. (pp. 12.) April, 1911.

G. M. J. Mackay. Transference Experiments with Mixtures of Potassium Chloride and Sulphate in Aqueous Solution. *The Journal of the American Chemical Society.* Vol. 33, p. 308. (pp. 11.) March, 1911.

Richard C. Maclaurin. Educational and Industrial Efficiency. *Science.* January 20, 1911.

Richard C. Maclaurin. The Reform of Oxford. *North American Review.* March, 1911.

Richard C. Maclaurin. The Outlook for Research. *The Pedagogical Seminary.* March, 1911.

Richard C. Maclaurin. Some Factors in the Institute's Success. *Science.* April, 1911.

Richard C. Maclaurin. Darwin at an American University. *Atlantic Monthly.* June, 1911.

M. I. T. *Bulletin of the M. I. T.* Reports of the President and Treasurer. Boston. Vol. 46, p. 166. Size 8vo. No. 2. 1911.

M. I. T. *Bulletin of the M. I. T.* Summer Courses, 1911. Boston. Vol. 46, No. 1. Extra number. p. 21. Size 8vo.

M. I. T. *Bulletin of the M. I. T.* Advanced Study and Research. Boston. Vol. 46, No. 3. Extra number. p. 45. Size 8vo. March, 1911.

M. I. T. *Bulletin of the M. I. T.* Register of Graduates. Vol. 46–3. p. 344. Size 8vo. March, 1911.

Robert H. Richards. Hindered Settling Classifiers. *Engineering and Mining Journal.* February 25, 1911.

C. M. Spofford. Earthquake Effects on Structures at Cartago, Costa Rica. *Journal of the Associations of Engineering Societies.* Boston, Mass. Vol. XLVI., p. 63. (pp. 17.) Illustrated. February, 1911.

H. F. Thomson. The Engineering Excursions. *Washington University Record.* Vol. VI. (pp. 6.) p. 15. Illustrated. December, 1910.

M. deKay Thompson. Applied Electrochemistry. The Macmillan Company, New York. Vol. 1., p. XII.,+329. Size 6 x 8¾. Illustrations 137. 1911.

Tech Winner at Glider Meet

At the first intercollegiate glider meet which was held at the Atlantic Aviation Field, on Memorial Day, by the Harvard Aeronautic Association, the Technology glider operated by P. W. Dalrymple, '11, won the distance event with a flight of 653 feet. Technology had two gliders, Tech I, and Tech III, Tech I, being operated by E. N. Fales, '11.

Tufts received first prize for mechanically controlled gliders; Technology for body controlled gliders and Cornell for general control in flight. The Harvard glider could not be made to leave the ground.

MISCELLANEOUS CLIPPINGS

The past week has registered two more important losses, that of Mrs. William Burton Rogers, widow of the founder and first President of the Institute of Technology, and Frederick Porter Vinton, one of this country's foremost portrait painters. Both of these representative figures, who belong to two distinct generations, will be sadly missed in this community.

Mrs. Rogers, who was well past eighty-five years, was truly a remarkable woman, beautiful to look upon, gracious and charming in manner and beloved throughout this land as the "mother of the Technology," whose graduates made her their annual toast and returned with interest the affection which she cherished for every Technology boy. In passing, she leaves almost her entire wealth to this Institute with which she had been so intimately associated, but it will be long before any financial gain can prove compensation for the loss of one who had been the leading personality in the life of this institution.

In 1853, her husband, Professor Rogers, resigned his professorship at the University of Virginia and came to live in Boston where he at once began to develop his plan for that "comprehensive polytechnic college" which in 1861 became the Massachusetts Institute of Technology. When Professor Rogers became exhausted by overwork and the prolonged struggle to carry on the new and almost friendless "Institute," it was his faithful wife who nursed him through a terrible illness and by her untiring devotion made it possible for him to again take up the work. Once more he grasped the helm and piloted the new "Institute" safely through stormy seas, and into calm waters; then having accomplished this noble work he fell dead at his post in 1882, on Commencement Day, upon the platform in Huntington Hall. He was succeeded by the late General Walker, who also rendered splendid service to the then rapidly growing institution.

Mrs. Rogers shared all of her husband's earliest plans and dreams for the Institute and in the thirty years which elapsed since his death, she became identified with its every interest. From her father, the Hon. James Savage, the accomplished genealogist, she inherited a strong and original mind and an intense love of accurate scholarship while she shared her husband's overwhelming enthusiasm for science. And after he became president of the National Academy of Sciences—perhaps the highest distinction obtainable by any American scientist—Mrs. Rogers repeatedly entertained that dignified body during its meetings in Boston, while her acquaintance with foreign men of science was to the end extraordinarily extensive. Her home in this city, as well as her home at Newport, was, like that of Mrs. Julia Ward Howe, a center of culture and educational interest and her generous hospitality to her Technology boys will long remain a precious memory in the vicinity which knew her best and loved her most.—*Hartford Courant*, May 27.

The death of Mrs. Ellen H. Richards calls attention to the fact that one generation has seen the recognition of women in the realm of applied science. Mrs. Richards took a degree at Vassar College in 1870. She was known there for her

practical ability and straightforward simplicity. Whenever she was praised she was wont to protest that she did only what the average New England girl could do.

After her graduation she was the first woman to apply for admission to the Massachusetts Institute of Technology. The faculty granted her request, although one professor opposed the plan. Five years later he married the student to whose admission he had objected, and her friends laughingly congratulated her on one more conquest for the average New England girl!

For more than twenty-five years Mrs. Richards was instructor of sanitary chemistry at the Institute of Technology. She became an expert in water analysis, in the chemistry of food, in practical sanitation, the cost of living and the prevention of fire loss.

She was made a trustee of Vassar College when the board was about to install what she knew was an antiquated system of sewage disposal. Almost before the gentlemen realized what was happening this woman had converted them to a plan for a sewage farm—a triumph for up-to-date, applied science.

A scholar of high ideals, she was never dry-as-dust in her methods. "There is no reason," she would say, "that proper food should not taste good, and that right living may not be enjoyed in a pretty house." She practiced what she preached.

This "average New England girl" won a national reputation, and she was also a devoted wife, a loyal friend, a "mothering" teacher, and a good homemaker. The span of her life saw a combination of the scholastic and the domestic virtues made possible for a woman, although her description of herself as "the average girl" was far too modest, so varied and so many were her parts and powers.—*Youth's Companion*, April 27.

We are reminded of the youthfulness of the Institute of Technology when we learn that the widow of the founder, William Barton Rogers, died in Boston only last evening. In a sense Mrs. Rogers was herself the maker of the Institute, for although for a few years after her marriage in 1849 to Professor Rogers of the University of Virginia she lived at Charlottesville, her husband in 1853 resigned his professorship and they removed to Boston, making their home on Temple Place with her father, Hon. James Savage, the accomplished genealogist of "The Genealogical Dictionary of New England." The leisure which was now his gave Professor Rogers time to develop and carry out the plan conceived by him much earlier for that "comprehensive polytechnic college" in Boston which in 1861 became the Massachusetts Institute of Technology. And when her illustrious husband sank into a long and terrible illness, exhausted by the early struggles of the new and almost friendless Institute, it was Mrs. Rogers who as a watchful and devoted wife, with all a woman's love and more than a woman's protection, eventually and fortunately brought him back to that measure of health which enabled President Rogers to take the helm once more and pilot the Institute safely through the stormy seas of the late seventies into the calmer waters of 1882, when he gave way to his chosen successor, General Walker, and, worn out, fell dead on Commencement Day upon the platform in Huntington Hall.

Sharing her husband's earliest dreams and plans for the Institute, familiar with every phase of its history, sensitive to everything touching its honor and its reputation, proud of its achievements, jealous of its independence, Mrs. Rogers, without children of her own, made sons and daughters of the Institute. And as she

outlived her husband a score of busy years she became so identified with its every interest as to embody in her charming and vivid personality its history, its spirit, its very being. Born as she was of the *noblesse* of New England and bred among the best traditions of Boston, she was naturally associated with some of its finest spirits and attached by choice, by native ability and by mother wit, to many of the best people of her time. Hence it came to pass that Mrs. Rogers was a notable figure wherever she went, and the leading personality in the life of the Institute.

From her father she inherited a strong and original mind and a profound love of accurate scholarship, while with her distinguished husband she shared a veneration for science which amounted almost to a passion. Only those who had the privilege of her close friendship and knew her home life on Marlboro street in Boston and at "Morningside" in Newport, realized how much mingled kindness and gayety dwelt beneath her social stateliness or how ardent was her attachment to the higher and nobler ideals of life and mind. Until advancing age forbade, she was hospitality itself to the ever passing host of Institute students and teachers. And after her husband became president of the National Academy of Sciences—perhaps the highest distinction obtainable by an American scientist—Mrs. Rogers repeatedly entertained that dignified body during its occasional meetings in Boston, while her acquaintance with the foreign men of science of her time was really remarkable.

This is no place to speak of Mrs. Rogers's personal charm or of her loyalty to all good works such as flourish in the soil of Boston more luxuriantly than in many other places, but the Instructive District Nursing Association, the Widows Society and numberless other public and private charities held her constant and individual interest and were aided by her benefactions. It was given to her, as to very few men or women of her time, not only to have lived in a notable circle throughout the whole Victorian Age but, so far at least as America is concerned, to have been able to say of it—what her modesty would never have allowed her to say—*Quorum magna pars fui.*—William T. Sedgwick, *Boston Transcript*, May 19.

Historiometry.—This term has been invented by Dr. Frederick Adams Woods of the Massachusetts Institute of Technology, to designate what he hopes will become a new branch of exact science, devoted to the solution of historical problems. To illustrate his method, attention may be called to his table representing relative degrees of "eminence" among the white population in America. Some states, and some sections, he shows, have produced more eminence than others far beyond the expectation from their respective populations. "In this regard," he says, "Massachusetts always leads, and Connecticut is always second." He then goes on to point out that "New York gives a trivial though constant excess above the expectation." From here southward the ratios drop off suddenly, but "for South Carolina the ratios again rise and exceed the expectation." Doctor Woods has applied his tests to ancient and foreign history, and found equally curious results. He thinks that such researches promise a method of penetrating "the tangled and perplexing jungle known as philosophy of history."—*Youth's Companion.*

The remarkable work done by the Massachusetts Institute of Technology in Boston is known all over the world. The fiftieth anniversary of this great institution was lately held. This work was begun by Professor Rogers, who had a perfectly clear aim in beginning it. Some might have thought that Boston with its

many great institutions fifty years ago, was hardly the place to begin so radical a departure as "The Boston Tech." Rogers held to Lowell's maxim that "new times demand new manners and new men," and as a corollary from this that "new conditions demand new schools." In discussing the matter with others Professor Rogers laid emphasis upon "the value of science in its great modern applications to the practical arts of life, to human comfort, and health, and to social wealth and power." A great principle in this development of practical science was set forth as the "importance of being useful." To bring this about the leading note of the scientist was "the dignity of the practical professions." Modern education is recognising the fact stated by Goethe "that a man never can learn to know himself by thinking but by doing." Carlyle quite agreed with this when he said that "the end of man is an action and not a thought, though it were the noblest." The Massachusetts Technical Institute deserves all the compliments being paid it for it has been a veritable seed bed of practical and higher knowledge.—*Free Press*, Winnipeg, Man.

BOOK REVIEWS

CLASS OF '77, MASSACHUSETTS INSTITUTE OF TECHNOLOGY. A DIRECTORY OF THE CLASS WITH BIOGRAPHICAL NOTES. Cloth, 6¼ by 9¼ inches, pp. 168; ILLUSTRATED.

This directory of the class is handsomely printed and contains pictures of nearly every member of the class, with ample biographies. Most of the biographies are accompanied by pictures of the subject, during his Institute days and at the present time. The compilation of this book took nearly three years and was carried through with great credit by the secretary, R. A. Hale. The book was printed by Edwin W. Davis, a member of the class.

THE 1910 YEAR BOOK OF THE RHODE ISLAND CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, published by the Chapter, Providence, R. I., in connection with its annual exhibition. Size, 8 x 10½; pp., 196, profusely illustrated.

This catalogue contains a number of exhibits of the work of Technology architects. Among them are J. Howard Adams, '99, John H. Cady, '06, Prescott O. Clark, '94, E. F. Ely, '82, E. B. Homer, '85, Howard Hoppin, '76, Wallace E. Howe, '92, Walter Kilham, '89, and several others.

GENERAL T. COLEMAN DU PONT, '84

Who has given the Institute $500,000 toward the purchase of a new site

NEWS FROM THE CLASSES

1868.

PROF. ROBERT H. RICHARDS, *Sec.*, Mass. Inst. of Tech., Boston Mass.

The secretary had an interesting letter from Stuart M. Buck early in the year in which he writes that in February he left New York with his wife and younger daughter for Bermuda and after a short stay left for the Isthmus by way of Antilles, where he was visiting his eldest daughter at the time of writing. He writes that the progress made on the canal since his visit has been something wonderful, especially on the lock construction and the Gatun Dam. He was fortunate in being there at the time of the Civil Engineers' excursion and took several trips with them. Buck occupies part of his time in consulting engineering of a confidential character.—Ellery C. Appleton wrote from Wadesboro, N. C., about the middle of March stating that he had been there since September, 1909, in charge of the construction of the southern end of the Winston-Salem South Bound Railroad, where it connects with the Atlantic Coast Line, which operates it, making a through route from the West Virginia coal fields to Charleston. He expected to be through with the work there in a short time and planned to take up some work of a similar character in the Carolinas. He writes that he has bought a ten-acre farm near Jacksonville, Fla., which he will occupy when he is through with active engineering work. Appleton has taken much interest in church work and has been superintendent of the Sunday School there for some months.—A letter from W. P. G. Hayward which was written early in February shows his great interest in Technology by his desire to join the alumni association and become identified with the good work the alumni are doing. He was expecting to take a trip to southern California late in February with the possible view of locating there if he can find what he wants.—Carson wrote the latter part of March saying that he had been away since early winter, engaged in professional work and in arranging his winter quarters at North Augusta, S. C.—Eli Forbes wrote that he was pursuing the even tenor of his way in Lancaster, where he has a little to do with the banks in Clinton and is clerk for one or two charitable institutions. Music is his principal resource when he cannot be doing outside things. He anticipates going to California if all goes well. He tried curling last winter and recommends it as a healthful exercise. He is just as interested in Technology and everything pertaining to it, as ever.

Dr. Robert H. Richards, head of the department of Mining and Metallurgy at the Institute, has been elected an honorary member of the American Institute of Mining Engineers.

1881.

FRANK E. CAME, *Sec.*, Metcalfe Apartments, Westmount, Quebec, P. Q.

Don't think that '81 is dead because nothing appears in the REVIEW about it—we are modest. One of the members wishes to record the very pleasant renewing of ties in the New York Technology Club, recently experienced. After an absence in foreign lands of several years the lure of Alma Mater brought him in where Abbott watches the treasury and keeps out a glad hand for rural members as well as dues.—Abbott, Brown and Barnes enjoyed a foretaste, a couple of times, of the larger affair at the time of the 50th anniversary.—Allen and Norris also get around occasionally. —French too is a member. The men of the "Oughts" look "Oh my!" when '81 is mentioned, but the democracy of the New York club makes us feel like two-year-olds, no matter how we look.

B

1882.

WALTER BRADLEE SNOW, *Sec.*, 170 Summer Street, Boston, Mass.

The following members of the class were in evidence at the dinner or elsewhere on the occasion of the Congress of Technology: Cheney, French, Gooding, Jenkins, Munroe, Snow and Walker. —After occupying the same office on Devonshire Street, Boston, for exactly twenty years, Alfred L. Darrow removed on June 1 to No. 8 Beacon Street, Boston.—Walter H. Hersey was rendered unconscious by collision between auto and motor truck some time since, but reported soon after that he was getting along all right. —The recent dedication of the completed portion of the Cathedral Church of St. John the Divine in New York carries the memory of the class back to the lamented Heins, as does also the following quotation from a recent issue of *The American Architect*: "It is not so easy to realize that twenty years have passed, and twenty years' steady work has been done, since, in the final competition, the design of two youths, associated under the firm name of Heins & LaFarge, was preferred above the designs of their elders for the cathedral of the Protestant Episcopal Church to be erected on Morningside Heights on the island of Manhattan. It was only the heavy laden committee of the diocese, clerical and lay, and its professional advisers, architectural and engineering, who had direct knowledge of the bewildering variety and multiplicity of designs submitted, whether invited or volunteered. But it

is well within many recollections that four designs only survived the successive siftings of the three sieves, and were submitted in a public or quasi-public exhibition to the comments of such as had any comments to make on them, comments again invited or volunteered on the chance that such comments might furnish some rays of illumination."

1883.

HARVEY S. CHASE, *Sec.*, 84 State Street, Boston, Mass.

Edmund W. Kingsbury, one of the artists of the class, held an exhibition of his water colors in April at the gallery of Charles E. Cobb, Boston. There were fifty works in the collection, among them some very excellent bits of landscape, and some fine effects in sea scenes, painted from Mount Desert, Jamaica, Florida, Italy, and also from Framingham where Kingsbury lives. His "Old Spanish Steps Jamaica" was especially admired.

1884.

HARRY W. TYLER, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

In connection with Professor Bardwell's removal to Cleveland, he lunched by invitation with the following members of the class at the Technology Club on Tuesday, June 20: Messrs. Adams, Doane, Gill, Mellen, Prescott, Puffer and Tyler.

1885.

I. W. LITCHFIELD, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The annual dinner of the class was held as usual the Saturday evening before Easter which occurred April 15, at the University Club. Those present at the dinner were Richards, Pierce, Little, Morss, Spaulding, Ames, Brown, Litchfield, Osgood, White, Eaton, Steele, Plaisted, Talbot, Bartlett and Doctor Schubmehl. Whenever the class of '85 get together there is never any need of a premeditated program and the annual dinner this year was as varied in its features and as entertaining as any of those of the past. Charles A. Brown, the retiring president, was ably assisted by Tenney White whose fund of reminiscence seemed inexhaustible. The members of the class were seated about a large round table, sixteen covers being laid. Tenney was unavoidably called away before the dinner was over but he had hardly gone when our own Bates (M. E.), who has never before been able to meet with the class, arrived from New York, and assumed Tenney's place. Arthur Plaisted was elected president for the coming year. There were a number of interesting and delightful features of this dinner of 1911 and one of them which was entirely personal will

be remembered by the secretary when other things are forgotten. There are many wonderful things in this world, but from one standpoint at least, the fine spirit of the class of '85 and the relations of its members to each other is the most beautiful of all.
—Charles R. Allen is now located in Boston at the office of the State Board of Education in the Ford Building. He is agent for the State Board of Education in the department of industrial education. His residence is 3 Dana St., Cambridge.—At the instigation of Alex McKim, a few of the '85 men in and about New York, dined at the Technology Club, 17 Gramercy Park, June 22. The event of the evening was the presence of Sid Williams, who has been unable to meet with us at our dinners and reunions in New England. A photograph of Sidney with his hat on would show little if any change during the years that have elapsed since he was at Tech. The other men present were McKim, Mahon, Richards, Dewson, Mears and Litchfield. The entertainment committee of the Technology Club, hearing that the '85 men were to have a blow-out on the 22d, celebrated the event by appointing a smoker for that evening, which was largely attended. The open air dining room at the club is a comfortable and delightful place to take dinner. The Tech Club is adjacent to the Columbia Club and cheers and college songs were exchanged with its members who were dining in their open air pavilion next door.—Harry Barr, who is associated with the Lamson Consolidated Store Service Company of Boston, superintended the installation of the mail carrier which is used for transporting the United States mail in the great Pennsylvania terminal in New York City. The device is an ingenious one and presented many engineering problems which have been successfully solved.—One of the very interesting and satisfactory features of the class dinner in April was the announcement that Charlie Eaton had presented the president of the Institute with a check for $10,000 for the purpose of erecting the buildings for the new summer school of civil engineering, at Gardner Lake, Me. Eaton has been very successful as a dredging contractor, principally in southern and West Indian waters; but this is by no means the first substantial evidence of his loyalty to the Institute.—Word has been received at the alumni office from the adjutant general's office of the U. S. A. at Washington, announcing the death of John T. Haines, who entered West Point after being with the class for a year. No particulars have been received.

1886.

ARTHUR G. ROBBINS, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The class of 1886 celebrated its twenty-fifth anniversary by a banquet at the University Club June 1, followed on the 2d by an automobile run along the North Shore and a shore dinner

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CLASS OF '86 CELEBRATING ITS TWENTY-FIFTH ANNIVERSARY AT MARBLEHEAD

at the Devereux Country Club at Marblehead Neck. The post prandial exercises at the University Club consisted of the reading of many letters of regret from those whom business demands and distance kept away. Under the skillful guidance of Clifford, memories of incidents long since forgotten were made real by the word pictures of those who were not fortunate enough to avoid the glance of the eye of the toastmaster, and in the end all were ready to shout in the words of the inventor of the Hub, "Old time is a liar! We are twenty tonight." The automobile ride was through the Back Bay Fens past some of the proposed sites of the New Technology, through Cambridge, Medford, and along the North Shore to Marblehead. The shore dinner was served on the open piazza, and C. C. Peirce, acting as master of ceremonies, with his naturally graceful flow of language kept everybody deeply interested listening, and recounting their several experiences until late in the afternoon. A group photograph was taken on the steps of the "old town house" in Marblehead which reveals the members in their usual beauty. Thomas, secretary of '87, was the guest of the day. Unfortunately Litchfield, secretary of '85, could not join the celebration. Those present were: Aborn, Anthony Bartlett (D. P.), Blunt, Borden, Burgess, Chadbourne, Chase, Clifford, Cobb, Cutter, Duff, Hathaway, Higgins, H. A. Howard, Ingalls, Kimball, Merriam, Miller, Noyes, Peirce, Proctor, Robbins, Shuman, Simpson, Whitney, Winsor, Richardson, Batcheller, Lloyd, Putnam, Locke, Foss.

1887.

EDWARD G. THOMAS, *Sec.*, Kewanee, Ill.

Your secretary has accepted the position of mechanical engineer of the Boss Manufacturing Company, of Kewanee, Ill. This company manufactures, on a large scale, low priced cotton gloves such as are used by motormen, engineers, steam fitters, lumbermen and other workers, and has factories in several eastern and western cities.—John W. Stearns has become vice-president and manager of the Elevator Safeguards Company, 430 North Pennsylvania Street, Indianapolis. His company manufactures patented devices for preventing both the opening of elevator doors except when the elevator cage is at the proper level and the operation of the elevator machinery when a door is open. Many buildings in the West have been equipped and their owners are highly pleased with the safety of operation which the device assures. —The secretary recently stopped at Welland, Ont., for a call on Stoddard, who has been for a number of years manager of the plant of the Plymouth Cordage Company, making binder twine and rope of all sizes. The company has a large tract of land in addition to that occupied by the plant, and has built about one hundred cottages for its officers and employees, which are fitted

with modern plumbing and heating and located in generous plots of land. The welfare of its workers is an object of constant attention, and kindergartens and a district nurse are provided. A large ball field equipped with a grand stand seating 2,000, lawn tennis courts and a clubhouse with showers, provide amusement; and in September, a grand field day of sports is held with an exhibition of flowers, vegetables, fruit and fancy work produced by the operatives. The rest of the property is cultivated, and Stoddard has twenty acres of wheat and as much in oats. In addition to all these duties, he is vice-president of the Welland Board of Trade, president of the Park Commission, and manager of the Welland County Agricultural Society.—Gulliver has recently undergone a severe operation at the Deaconess Hospital in Brookline, Mass., from which he is just now upon his feet again. He has been in somewhat poor health for a number of years, but is confident that this operation will restore him to vigor and health.

As a representative of '87, the secretary accepted the cordial invitation of the class of '86 to join them in an automobile ride and a shore dinner at the Cliff Club, Marblehead—one of the events of their 25th anniversary. The day was most perfect, the selected route covered the best of the unequalled North Shore roads, and the dinner, under the able direction of Arthur Anthony and Charlie Pierce was delightful. Every man was induced to speak and it was most interesting to hear from '87's one-time rivals but all-time friends, their recollections of student days, and their present life and duties. It was particularly to be noted that a large proportion of '86 men are administering affairs of large importance, are active in large corporations or have become men of public note. It seems obvious that the Institute training of our day, so frequently criticised as narrow, resulted, after all, in pretty broad-gauge citizens. On behalf of '87, I thank our friends for their sincere hospitality and convey to them our best wishes that their 50th anniversary may be as successful.—Schmidt has been elected president of the Northwestern Alumni Association for the coming year. —John W. Adams, Jr., of St. Paul, Minn., son of our first class secretary, has been making a tour of the middle west and eastern colleges as captain of the University of Minnesota tennis team. They made a very creditable showing, winning a majority of matches played. The trip under the auspices of the college athletic association was an unusual tribute to the standing and popularity of the men comprising the team.—Sprague will be one of the technical members of a party which will make an automobile trip from Washington to San Francisco early in the fall, in the interests of the National advancement of good roads.

1889.

WALTER H. KILHAM, *Sec.*, 9 Park Street, Boston, Mass.

Orrok is to lecture to the evening class at the Polytechnic Institute in Brooklyn, N. Y., on "Power House Engineering."—Five papers were contributed by '89 men to the Congress of Technology.—Huntoon's marriage to Miss Ida Hersey Vose at East Walpole, Mass., on April 18, last, is announced.—One of the pleasantest times which '89 has ever spent occurred at the plant of the Massachusetts Breweries Co., on April 11, at the invitation of G. R. Alley. After an hour spent in examination of the plant and the various processes of manufacture, the party sat down to an afternoon tea composed of delicious "hot dogs," sandwiches and the wine of the country, enlivened by conversation of unusual brilliancy even for '89. Fiske's partiality for the "dogs" was worthy of note.—*Unity* has the following from its issue of May 4, last: "Altogether it was a fitting anniversary of the Chicago Peace Society, which was inaugurated nearly two years ago and has been nourished into strength and worked into efficiency through the competency of its secretary, Rev. Charles A. Beals, whose removal here was a benign capture which robbed Massachusetts in order to enrich Illinois."—Whipple, now one of the most widely-known sanitary engineers in this country and of wide reputation as a lecturer and author on technical subjects, has accepted an appointment as professor of sanitary engineering at Harvard University, and will begin his duties with the coming academic year in the Graduate School of Applied Science.—Lewis writes interestingly as follows about the trip he and Mott made to Panama last spring:

We left New York in a cold northwest snow flurry and in about two days were enjoying most beautiful summer weather and smooth seas which followed us all the way. A twelve-hour stop was made at Jamaica, where we landed early in the morning at Port Antonio. After visiting this most attractive and tropical place, during the forenoon, we took the train for a ride across the island to Kingston. This ride was most fascinating as the scene was constantly changing between views of the ocean and the mountains, the tropical verdure and the native villages. We took the boat again in the evening at Kingston and after a charming sail across the Caribbean Sea landed at Colon just one week from New York. The party, increased by those who had come via New Orleans, numbered about one hundred seventy. A special train carried us across the isthmus to Ancon (Panama) where very comfortable quarters were provided at the Hotel Tivoli, the headquarters during our stay. From here by special or regular train the party went every day to visit and inspect some part of the great work. A most interesting and instructive ride was taken *through* the great Culebra Cut. It was also viewed from the banks from which the work of "making the dirt fly" was watched with great interest and one was impressed by the immense magnitude of the undertaking and with the vigor and push with which the work is being carried on. We walked over the great earth dam at Gatun which looks like one of the eternal hills which it joins at either end. The immense concrete locks at Gatun, Pedro Miguel and Miraflores were visited and closely examined. Here millions of cubic yards of concrete are being placed with great speed, at small unit cost, and with excellent results. A trip was made over the forty-six miles of the

new Panama Railroad showing the tropical jungle, and the large cuts and fills giving us a better understanding of the great magnitude and the difficulties of the work. At Balboa, the Pacific terminus of the canal, we visited the five-mile Naos Island breakwater and the immense dump for the spoil from the Culebra Cut. Here we saw a nineteen-car spoil train unloaded and the spoil spread in a few minutes and also a track shifter, invented on the work, shifting track. One day we had a beautiful sail in Panama Bay, visiting Toboga Island, lying ten miles from shore. Here is maintained in the midst of very tropical scenery a sanitarium for rest and recuperation for the commission employees. But a short walk from the sanitarium lies the village of Tobago, whose history goes back about 400 years, and is a very old and strange-looking settlement. Ancon Hospital, situated on Ancon Hill in the midst of the most beautiful surroundings, was found to be very extensive and to rank with the most successful hospitals of the world. Our spare time was spent wandering through the city of Panama, where we found several old ruins and ancient churches. The President of the Republic of Panama gave us a reception and the Tivoli Club gave a reception and dance at the Hotel Tivoli. The trip was thoroughly enjoyed by all and we returned after a week's stay on the isthmus enthusiastic over the immense work the United States is doing so thoroughly, substantially and efficiently.

1890.

GEORGE L. GILMORE, *Sec.*, Lexington, Mass.

Charles Hayden was operated on for appendicitis in New York May 6. He was taken ill very suddenly the afternoon before and an operation was found to be necessary at once. We are very glad to report that he is now progressing finely and will soon be about as usual. Hayden is one of a committee named to work out the details of the coal, iron and steel merger in Alabama. This takes in the Alabama Consolidated Coal & Iron Company, the Southern Iron & Steel Company, and the Lake Borgne & Canal Company. The name of the new company is the Alabama Consolidated Coal, Iron & Steel Company.—Professor Calkins and family will spend the summer at their cottage at Woods Hole, Mass. Calkins will devote most of his time, when not on the golf course, to working in the government laboratory situated there. He reports the arrival of Gary N. Calkins, Jr., on Feb. 1.—J. B. Blood has been in Milwaukee for the past few weeks engaged in work for the Stone & Webster Company.—W. H. Johnson of Haverhill, Mass., is treasurer of the Cushnoc Paper Company, with mills at Augusta, Me., and an office in the Old South Building, Boston, Mass.—Winthrop Coffin, a special of the class of 1890, and now with the banking firm of Perry, Coffin & Burr, sailed for the Mediterranean on the *Franconia* in March.—W. Z. Ripley returned from a trip to Egypt early in April.—C. C. Babb is president of the Maine Society of Civil Engineers with headquarters at Augusta, Me.—Mr. and Mrs. Darragh deLancey have been spending the winter in California. In April they visited Mt. Wilson and saw the great telescope which Hale has in charge.—Mr. and Mrs. George E. Hale have been in Egypt the past few months where Hale has been taking a complete rest from his

astronomical work.—At the fiftieth anniversary reunion of Technology in April the following members of the class of 1890 were present at the smoker and banquet held in Symphony Hall: Atwood, Batchelder, A. F. Brown, Blood, DeWolfe, Eaton, Gilmore, Goodwin, E. Robinson, Royce, Richmond, Rogers, Simpson, Whitney.—Tech night at the Pops, June 6, DeWolfe, Rogers, Spaulding, White and Gilmore met at the Art Club and later went to the Pops where Bragg was the only other member of the class to appear.—February 24 at the meeting of the Buffalo Technology Club, Schuyler Hazard, formerly resident engineer for the New York Contracting Company, Pennsylvania Terminal, gave a talk on the New York City Terminal & Pennsylvania R. R., giving a general outline of the methods employed and the work performed by the contractors. The talk was illustrated with lantern slides and proved most interesting.—H. B. Burley is treasurer of the Boston Insulated Wire & Cable Company with a factory in Dorchester.—J. K. Noyes, who is chairman of the committee on highways of the county board of Brume County, New York, recently presented to the board a comprehensive report on the state of good roads construction in the county. The report received much favorable comment in the Binghamton papers.—Dr.Franklin W. White who has been giving a course of free public lectures on "Indigestion and Its Causes" at the Harvard Medical School is widely quoted in the Boston papers because of his valuable advice in regard to the proper selection of food. Doctor White has taken his life in his own hand as he has directed his guns at the immortal baked beans. "It is a fact worthy of special note," he says, "that beans so indissolubly connected with Boston's fame, are 'notoriously indigestible,' as are also peas, the reason being that they undergo fermentation in the stomach or bowels. If they are mixed with milk and made into a purée they become digestible," he said. "The longer vegetable foods are cooked the more digestible they are, but the longer meat is cooked the more indigestible it becomes. The most easily digestible foods that are nourishing are broths, gruels, milk, custard, soft-boiled eggs, sweetbreads, scraped raw beef, chicken and squab, toasted or stale bread, macaroni, and mashed or purée of potato. Among the foods hardest to digest are smoked or fried meats, sausages, pork, liver, fat meats like goose and duck, coarse vegetables like turnips, carrots, parsnips, tomatoes, cucumbers, lettuce, spinach, celery and even green corn. Pineapple and banana are bad, the latter being simply raw starch, like a raw potato. None of the above fruits or vegetables have any appreciable food value."

Miss Elizabeth E. Bickford is teaching school in California. Her permanent address is in care of her sister, Mrs. Eliza A. Bean, Orford, N. H.

Franklin Knight of New Haven has accepted a call to the

rectorship of St. Paul's Episcopal Church of Holyoke. He will assume his new duties in early September.

1891.

HOWARD C. FORBES, *Sec.*, 88 Broad Street, Boston, Mass.

Forty-nine men were present at our 20th reunion at Osterville: Aiken, Alley, Bassett, Bird, Birks, Blanchard, Bowen, H. G. Bradlee, Bryant, G. A. Campbell, J. Campbell, Capen, Conant, Damon, Dana, Douglas, Dunham, Fiske, Forbes, French, Garrison, Goodwin, Hatch, F. C. Holmes, G. A. Holmes, Hooper, Kimball, Knowles, Leeming, Mansfield, F. C. Moore, F. F. Moore, Moseley, Norton, Palmer, N. R. Pratt, Punchard, Ryder, Shattuck, Spooner, Swan, Trowbridge, Tyler, Vaillant, Walker, Wilder, Wilson, Whitney and Young. A full account of the reunion will be published in book form later, with photographs. By vote of the class, a message was sent to President Maclaurin, who has written the following acknowledgment:

> I shall be obliged if, as opportunity presents itself, you will convey to the members of the class of '91 my cordial appreciation of the greetings that were sent to me on the occasion of the twentieth anniversary of the class. With such loyalty and enthusiasm behind it, the Institute may look into the future without the slightest misgivings. Please accept my heartiest good wishes for the class of '91, individually and collectively.

HENRY HUTCHINS SYKES

Henry Hutchins Sykes died at his home at New Haven on May 18. He was the general manager of the Southern New England Telephone Co. We print the following account from the *Telephone Bulletin:* "Mr. Sykes had suffered for several years from a difficulty which, during the year 1908, forced him to relinquish his duties and seek recovery in complete rest and change of life. Returning from this absence from business cares, both Mr. Sykes and his associates were encouraged to believe that the trouble had been conquered, and that it would again be possible for him to assume his work and responsibilities in the company, but the improvement proved to be but temporary, and during the last few months he had been in failing health, and unable to give to his work the active direction and care which was his nature.

"Mr. Sykes was born in Suffield, Conn., and was in his forty-fourth year. He was the son of Henry M. and Adelaide M. Sykes, and is survived by both parents, and by one sister, the wife of Dr. Frank S. Meara, of New York."

THE 20TH RE-UNION OF THE CLASS OF '91 AT OSTERVILLE, MASS.

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1893.

FREDERIC HAROLD FAY, *Sec.*, 60 City Hall, Boston, Mass.
FREDERIC H. KEYES, *Asst. Sec.*, 88 Broad Street, Boston, Mass.

The annual meeting of the class of 1893 was held on Friday, June 9, at the Tatnuck Country Club at Worcester, Mass., the following men being present: James W. Rollins, Jr., '78, vice-president of the Alumni Association (guest); F. B. Abbott, A. F. Bemis, S. A. Breed, T. M. Brown, E. B. Carney, C. N. Cook, H. N. Dawes, F. N. Dillon, A. B. Edwards, F. H. Fay, G. B. Glidden, A. L. Kendall, F. H. Keyes, W. F. Lamb, H. Latham, F. F. Phinney, C. W. Taintor and F. J. Tomfohrde. The main party left Boston early in the afternoon in three automobiles, arriving at the Country Club in time for golf before dinner. Through the kindness and efforts of Mr. Latham, we enjoyed the privileges of the club and a most excellent dinner, after which Mr. Rollins spoke briefly on the extent of the interest shown by the general public in the recent movement to obtain increased state aid for the Institute, the success of which was due largely to the efforts of Mr. Rollins, who was chairman of the State Aid Committee. All the officers of the class were reëlected by unanimous vote for the ensuing year, George B. Glidden, president; Edward B. Carney, first vice-president; Edward D. Densmore, second vice-president; F. H. Fay, secretary and treasurer and F. H. Keyes, assistant secretary. The return trip to Boston was successfully negotiated by moonlight during the latter part of the evening. —Emery, J. A., has been made a member of the board of governors of the Technology Club of New York.—Baxter, Jesse B., has resigned his position with Walter Baker & Company, Ltd., and is now vice-president of the Blue Hill National Bank.

An informal class dinner was held at the Boston City Club on Monday evening, April 10, 1911, in connection with the celebration of the Fiftieth Anniversary of the granting of the Institute's charter. Immediately at the close of the dinner the party numbering thirty-five proceeded by taxicabs to Symphony Hall to attend the big alumni smoker. Those in attendance at the dinner were J. C. Abbot, F. B. Abbott, Barnes, I. M. Barrows, Baxter, Beattie, Bemis, Blake, Boyd, T. M. Brown, Bryant, Buchanan, E. B. Carney, Codman, W. W. Cutler, Densmore, W. E. Evans, Fay, Gilson, Hagar, Hopewell, Jameson, A. L. Kendall, Keyes, E. R. Kimball, Latham, Leeds, Lynch, C. L. Norton, E. Page, Pevear, Phinney, Rogers, Spofford, and P. H. Thomas. At Symphony Hall, Crosby, Glidden, Keith, C. F. Morse and H. A. Morss joined the party, bringing the total attendance of the class at the smoker to forty.—Wilfred A. Clapp, civil engineer, quartermaster's department, United States army, who has been stationed for several years at Fort McKinley, Portland, Harbor, Me.,

in charge of engineering work during the construction of that post, has been transferred to the Pacific coast, his present address being in care of the construction quartermaster, Fort McDowell, California.—Charles H. Johnson is about to go to Cuba to take a position as civilian engineer upon the construction of the new United States naval base at Guantanamo.—J. C. Hawley, civil engineer in the quartermaster's department, United States army, has recently been transferred to Fort Moultrie, South Carolina, seven miles from the city of Charleston, where he is in charge of the dredging of a new channel across the island at that post to replace the existing government channel which is being shoaled by river deposits.—The firm of Thomas and Neall, consulting electrical engineers, of Boston and New York, has been dissolved, and Percy H. Thomas, senior member, continues in independent practice at 2 Rector St., New York City.—Maj. Frank P. Williams of the medical corps of the Massachusetts state militia, a Boston physician, was among the first detail of officers from that state to be sent to Texas to observe the mobilization of United States troops along the Mexican border.—The following changes of addresses have been reported: S. H. Brockunier, care Erie Consolidated Mines Company, Gaston, Nevada County, Cal.—Joseph W. Ellms, superintendent of Water Works, Cincinnati, Ohio.—Frederick H. Howland, Seventh and Chestnut Sts., Philadelphia, Pa.—George I. King, 200 Brady St., Butler, Pa.—Walter T. Peck, P. O. Box 769, Havana, Cuba.—Winthrop P. Tenney, care Continental Insurance Company, 46 Cedar St., New York City.

1894.

PROF. S. C. PRESCOTT, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

M. S. Chace has been appointed as one of the delegates from America to the International Congress of Naval Architecture and Marine Engineering to be held under the auspices of the Institute of Naval Architecture in London July 3–8. Chace will present a paper at these Jubilee Meetings, as they are called, on "The Results of Tests on Models of Submarines," a subject to which he has given much attention, and on which he has bestowed a great deal of experimental work during the last year.—In the list of those getting their degrees in the class of 1911 appears the name of Herbert E. Hewitt, who will be remembered as a member of the class of 1894, but who was not at that time a candidate for graduation. It is to be hoped that the new affiliations of Hewett with '11 will not detract from his interest in '94, but rather that he will now feel more closely bound to the Institute and to his old associates here.—It is with very sincere regret that the secretary announces the death of Mrs. W. H. King, which occurred in New York on July 18. The cordial sympathy of the whole class

will be extended to King in his loss.—The following members of the class were present at the Pops: Chace, Gardner, Nash, Piper, Prescott. An interesting feature was the appearance at the class table of Nash with his son, now twelve years old, scheduled for the class of 1921.

1895.

GEORGE A. ROCKWELL, *Sec.*, 101 Tremont Street, Boston, Mass.

The class will be interested to hear that Francis E. Faxon was recently married.—The address of Arthur D. Dean has been changed to New York State Education Department, Albany, N. Y. —A class dinner was held at the Boston City Club on April 10, 1911, as an incident of the Congress of Technology. The following were present: J. L. Newell, E. L. Hurd, C. H. Parker, F. A. Bourne, H. K. Barrows, W. C. Brackett, W. D. Parker, G. F. Shepard, G. W. Priest, William T. Hall, J. E. Walworth, W. S. Williams, G. W. Hayden, C. B. Sanborn, E. L. Wengren, W. F. Stevens, E. H. Clapp, R. J. Williams, G. H. Gardiner, G. A. Cutter, A. D. Fuller, E. A. Tucker, E. J. Loring, C. F. Tillinghast, C. W. Berry, L. F. Howard and G. A. Rockwell. After the dinner the class went to the smoker at Symphony Hall.—At the banquet at Symphony Hall on April 11, 1911, in celebration of the Congress of Technology, '95 was very well represented by the following twenty-three men: J. L. Newell, J. W. Cooke, William T. Hall, G. Defren, E. J. Loring, A. D. Fuller, G. W. Hayden, E. H. Clapp, G. Clapp, C. B. Sanborn, R. J. Williams, C. H. Parker, C. F. Tillinghast, G. F. Shepard, L. F. Howard, E. L. Hurd, L. K. Rourke, W. C. Brackett, F. T. Miller, W. S. Williams, F. A. Bourne, W. D. Parker, and G. A. Rockwell.—Through the courtesy of E. L. Hurd and F. T. Miller the class had a most successful outing at the Seapuit Club, Osterville, Mass., on May 20, 21 and 22, 1911. There were plenty of automobiles available and we formed them in line and started from Milton about 9 a. m. Saturday, May 20, reaching the club in time for lunch. From then until Monday noon the time passed very quickly, some playing golf and some pool. It might be noted that some showed they could not play golf and others showed that they could not play pool. Some made use of the automobiles for driving about Cape Cod. The return to Milton was made Monday afternoon. The Seapuit Outing Club was formed. E. L. Hurd was elected Promoter of Social Intercourse; F. T. Miller, Censor of Places of Amusement; J. L. Newell, Computer of Pool Scores; E. H. Clapp, Teacher of English among Italian Dogs and G. A. Rockwell, Napoleon at Waterloo. These officers were unanimously elected, probably because they made themselves more prominent than any other members of the class. It is hoped that the courtesy of Mr. Hurd and Mr. Miller has not been exhausted. If not, it is quite certain that even a larger

number of the members of the class will go the next time.—The annual class meeting and dinner were held at the Boston City Club on June 6, 1911. There were present at the meeting, J. L. Newell, E. L. Hurd, L. K. Rourke, W. D. Parker, J. E. Walworth, H. A. Holdrege, F. A. Hannah, W. S. Williams, E. H. Clapp, D. B. Weston, R. J. Williams, E. J. Loring, F. S. V. Sias, C. B. Sanborn, W. C. Powers, A. L. Canfield, and G. A. Rockwell. After the dinner the secretary's report and treasurer's report were read and an adjournment was made to Tech Night at the Pops.
—A late number of the *Electrical World* contains an excellent picture of Parker H. Kemble, who has recently left the Edison Electric Illuminating Company of Brooklyn, New York, as district manager, to become general sales manager for the Toronto Electric Light Company, of Toronto, Ontario. The *Electrical World* says:

Mr. Kemble was educated in the arts and sciences at Harvard, the Technology School in Dresden, Germany, and the Massachusetts Institute of Technology. His theoretical training was supplemented by practical experience in marine and mechanical engineering in the shipyards of William Cramp & Sons, Philadelphia. Later he joined the engineering staff of the Boston Elevated Railroad Company, where he was employed in the design of power stations and cars. When the Windsor Locks Electric Lighting Company, the Enfield Electric Light & Power Company and the Enfield Gas Company were consolidated into the Northern Connecticut Light & Power Company of Windsor Locks, Conn., Mr. Kemble was engaged to rebuild and operate the combined system. An account of this interesting work appeared in our issue of May 5, 1910. Prior to joining the staff of the Brooklyn Edison Company Mr. Kemble was employed by the National Electric Light Association as acting executive secretary in the preparation and handling of the Atlantic City convention. His wide experience and training made him a valuable asset of the Edison company and fitted him admirably for his new post. Mr. Kemble is a member of the American Society of Mechanical Engineers and the Society of Naval Architects and Marine Engineers. He is also an associate member of the American Institute of Electrical Engineers, United States Naval Institute and American Society of Naval Engineers.

1896.

PROF. CHARLES E. LOCKE, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

During a recent reorganization of the Bell Telephone interests in the middle West, L. N. Whitney, was advanced to the position of general superintendent with headquarters at Indianapolis. His principal work consists of reorganizing and rearranging the various smaller companies of the middle West, so that they may fit with the general system of the Bell Company.—J. W. Stickney was recently advanced to the position of commercial superintendent, having charge of the active business management of the Bell interests in the same territory.—J. L. Wayne at the same time was given the position as traffic superintendent, having charge of the operation of the Bell plant in the same territory.
—The crowd turned out well at the smoker and banquet April 10 and 11 in connection with the Congress or Technology. The

CLASS OF '96 CELEBRATING ITS 15TH ANNIVERSARY AT LITTLE SQUAM LAKE, N.H.

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ASTOR LENOX AND
TILDEN FOUNDATIONS

following men were present at either one or both events: J. A. Rockwell, E. C. Hultman, H. W. Hayward, G. F. Ashton, J. G. Callan, E. R. Brackett, J. H. Haste, C. E. Locke, H. C. Lythgoe, H. S. Baldwin, M. E. Pierce, H. Cummings, Jr., C. H. Young, D. W. Beaman, A. D. Maclachlan, P. W. Litchfield, F. H. Smith, H. K. Sears, S. S. Bell, H. D. Jackson, E. H. Robinson, C. Batchelder, M. L. Fuller, H. G. Grush, W. H. James, N. H. Sanderson, F. C. Hersey, Jr., C. C. Howland, Joe Hewett, C. W. Tucker, C. B. Tower, J. E. Lonngren, J. E. Woodwell, T. W. Bailey, G. E. Stratton. Some of these men such as Cummings, Ashton, Sears, Howland, and Bailey have appeared very, very rarely at any class gatherings, and it was a pleasure to see them again. From Johnstown, Pa., came Lonngren for the first sight his classmates have had of him since 1896. Fifteen years have only served to give him a little more avoirdupois. Haste came from Rochester, N. Y., and sang in the same fine form as on the old glee club. Litchfield came on from Akron, Ohio, and Young and Woodwell from New York. "Con" acted as usual. Previous to the smoker on April 10, eighteen of the fellows gathered at Charlie Wirth's restaurant on Essex street, for an informal supper. Twenty-eight '96 men were counted at the smoker and sixteen at the banquet.—Hultman sailed from New York on June 17 with the Boston Chamber of Commerce crowd on their European tour. He felt that he deserved a rest after the passage of the Institute bill by the Massachusetts legislature. As an active member of the Technology committee his previous experience, both as representative and senator, was of great value in working the bill through its various stages.—Ralph C. Henry announces that he has opened an office for the practice of architecture at 8 Beacon street, Boston, Mass., in association with Clarence P. Hoyt.—At the Minnesota convention of the International Association for the prevention of smoke, Joe Harrington read a paper on the Harrington Stoker, dealing especially with its application to small units.—E. H. Laws has recently been advanced to the superintendency of the Ohio and Colorado smelter at Salida, Col.—At the Pop concert in Symphony Hall on June 6 there were eleven '96 men present: F. H. Smith, G. P. Hatch, E. R. Brackett, C. B. Tower, C. W. Hapgood, J. W. Clary, A. P. Underhill, C. E. Locke, W. H. Clifford, Jr., E. H. Robinson, S. S. Bell. Clary had been ordered up from Washington on a short job and took advantage of the opportunity to see his classmates for the first time since 1896.—Captain Clifford was another man to make his début. Just now he is on the U. S. S. *Missouri* stationed at the Boston Navy Yard. He has recently sent in his resignation, to take effect August 24. He is a brother of Major Clifford of Portland, Me., and resigns to enter business. He has been in the Marine Corps since 1899.—The *Iron Age* of March 23 contains a description of the new wire plant of the

Cambria Steel Company at Johnstown, Pa. The article closes as follows:

Mr. John W. Lonngren, for many years superintendent of the wire department of the Colorado Fuel & Iron Company at Pueblo, has been appointed superintendent of this plant and it has been erected largely under his supervision.

Reunion of the Class of '96 at Sherwood Forest, Squam Lake, N. H.

Foreword. It is with much regret (and other feelings) that we are forced to announce the base desertion and traitorous action of the officially appointed reunion historian who capitulated to the enemy even before he started for the seat of strife. This will explain the mediocrity of the story, except that part describing the ball game. This has been contributed by Doctor Rockwell and from a medical and literary point of view will be found to be a homeopathic gem.

Previous classes had told us of the beautiful location of Sherwood Forest, of its calm, restful atmosphere, and finally of its ideal host, Dr. F. E. Schubmehl, with his assiduous corps of assistants, but we found that the half had not been told. The suggestion is made to the liberal friends of M. I. T. that coincidentally with the securing of a new site we also secure from Doctor Schubmehl the perpetual use of his camp for official class reunion grounds. The advance guard consisting of Lythgoe, Rockwell and Locke left North Station, Boston, at 8.15 a. m., Thursday, June 15, arriving in Lowell at 9.00 a. m. There we were met by C. W. Tucker with his Stanley milk wagon and the trip commenced over the road. Call was made on Fred Coburn who was found to be in the bald headed class. Family cares prevented him from joining the crowd. In spite of hot brake shoes the machine was able to reach Manchester in time for lunch through the strenuous work of Rockwell, who gave it frequent doses of aqua in allopathic quantities. In Manchester Thompson took us in hand and we passed a pleasant hour at the famous Derryfield Club. Rested and refreshed we continued on through Concord, Franklin, Laconia and the Weirs, where the last stand was made for water. Camp was made at 6.30, where we found awaiting us Joe Driscoll, Chenery, Merryweather, Wise and Sanderson, who had come up by train. Tucker was much chagrined to find that the Boston & Maine had won out on his Stanley but with characteristic vigor he immediately shifted the blame to Rockwell for his failure to get out and push when we were climbing hills. The dinner call put an end to the discussion and soon peace was restored and all joined in a united attack on the bountiful supply of steak and onions which the chef had prepared. The evening was spent in the Recreation Hall before the six-foot fireplace with its blazing

fire and a game of cards was indulged in by the experts. All were in bed early. Friday morning we were up almost with the sun for an early dip in the lake. After breakfast Fuller appeared and during the day the following arrivals were recorded: Hurd, Grush, Melluish, F. H. Smith, Sumner, Merrill, Hersey, Hatch and Partridge. Sanderson was forced to leave at night in order to be in Boston to celebrate the seventeenth of June. Nothing strenuous was allowed on this day. Most of the fellows indulged in bowling and cards were also employed to while away the time. A continuous fight was made to dispose of the grub provided by our host but the day ended with the score heavily in favor of Schubmehl. Everyone succeeded in getting to bed before it was time to get up, but Joe Driscoll had a narrow escape. Partridge started to take a picture today, but it was after lunch before he started so that darkness made him suspend operations before he finished. Saturday Rockwell and Hurd volunteered to relieve the situation regarding the scarcity of food supply and started off on a fishing trip loaded down with worms, spoons, shiners, and other forms of bait. This was the day of the great bowling match between the teams captained by "Weber" Tilley and "Fields" Merrill. The latter was leading when "Weber" rolled himself down the alley and scored a strike. "Fields" claimed a foul which was not allowed. It was some time before the captains were disassociated into their component parts, the umpire rescued, and fines apportioned and collected. To settle the team rivalry a pool game was started, which, after an hour, was called on account of lunch, the score then standing eight balls to seven in favor of the winning side. Much regret was expressed that the reunion could not be prolonged another week so that the game might be fininshed. The ball game ensued in the afternoon.

REPORT OF BASEBALL GAME, SQUAM LAKE, HOLDERNESS, N. H.

"Sherwood Forest"

TEAM A	TEAM B
Partridge, 3rd	Smith, 1st.
Melluish (Cap.), c. f.	Stevens, 3rd.
Hatch, 2nd.	Sumner, 2nd.
Grush, r. f.	Wise, c. and p.
Merryweather, p.	Driscoll, l. f.
Hurd, 1st.	Fuller, c. f.
Rockwell, c.	Hersey (Cap.), p.
Maclachlan, l. f.	

Team A.	0	3	1	3	5	5	—17
Team B.	0	4	3	0	1	4	—12

Scorer, Merrell. Umpire, Tilley. The fans, Chenery.

It was a great game that took place in the tall grass on the shores of little Squam under a summer's sun. The grand stand rocked with the demonstrations from the fan. Before the game was well under way the appearance of a female, on the *outskirts* of the forest, created no little concern and Captain Hersey remarked that under the circumstances his costume was too abbreviated. As the lady approached there was a grand scramble to do her honor, and when the clouds had cleared away and proper surgical measures had been completed, none other than Brother Hurd was the base deceiver. This colored lady on first covered herself with glory, confusion and at times embarrassment when interfered with by *base* runners. Several died at first in spite of adequate medical mistreatment, but "Doctor Parkhurst" was on hand to "cover up" all professional mistakes. Joe Driscoll was several times lost in left field looking for Maclachlan's long flies, but he will learn the rules of the game in time. The battery work was stellar and team-play was (n)ever in evidence, but considering the rotten decisions of both the umpire and scorer it was quite a ladylike party. The keg failed to arrive on 3d and considering this lack of foresight, the agility shown in getting to the 3rd sack was unexpected. Those who missed the keg at 3rd found it at home ("Sherwood Forest"), and it is whispered that several went "home" too many times. Scorer Merrell was all but annihilated for failing to know whether the side at the bat or in the field was making the runs, but after the 3rd inning he began to take some of his "milk-powder" and regained consciousness. John Tilley showed little ability as a peacemaker but made up for light brain capacity by modest (?) measurements about the waist. Team A's success was in no little way due to the energy and scientific coaching of Jim Melluish and the work of "Baby" Smith at first, "Butterfinger" Sumner at second, "The New York Delegation," Stevens at third, "official photographer," Grush in right and Hatch at second made the afternoon's sport one to be long remembered. It wasn't darkness that called the game; but because official weight showed a great falling off in "Skinny" Fuller, Partridge having to take several "moving pictures," otherwise playing fair, together with a general demoralization because of the thirst with no succor.

Tucker got out his milk wagon this morning and started for home accompanied by Lythgoe. They felt that they must go in order to be back in Boston by Monday morning. Maclachlan appeared this morning for breakfast and H. C. Stevens at lunch. Thompson arrived in his auto in time for the ball game. The formal class dinner was held informally this evening. Fish was to have been the main course, but the fishermen had returned empty handed, and so we had a pick-up dinner which nearly overflowed the tables. There were no set speeches but everybody made a noise except Merryweather and Partridge. Several song hits were

rendered by the quartette assisted by the full company. These were well received except for the second verses. By special request Partridge gave his famous illustrated talk on "Personal Experiences in Alaskan Prisons" and when he had finished he informed us it was one of the most appreciative audiences that he had ever addressed. Ben Hurd pronounced it a dream. Joe Driscoll in his eagerness to drink in every word nearly climbed over the stage while Thompson was so struck by the beauties of the Pribloff Islands and the attractiveness of the seals that he left the crowd at that point. Rockwell desired that the lecture be repeated for his benefit explaining that he had been overwhelmed by the flood of ideas regarding Alaska's natural beauties, climate, history and commercial possibilities. Singing of Tech songs filled in the rest of the evening with Melluish at the piano. By special request we were lulled to sleep by an extended phonograph concert while "Nurse" Smith made frequent rounds serving ice water. Sunday was a day of quiet. In the forenoon a grand triumphal tour of Big Squam Lake was made by boat. In the afternoon a big bunch departed to catch the Boston train at Ashland leaving behind only Rockwell, Smith, Melluish, Driscoll, Partridge and Locke. After supper our host exhibited his skill in legerdemain and a delightful evening of conversation and reminiscences was had. At sunset the '96 flag and the Stars and Stripes were officially lowered after having been flying continuously since Friday morning. Monday saw us up at 4.00 a. m., to catch the early train for Boston. At Concord we found H. D. Jackson who had yielded to feminine charms and had not reached the camp.

NOTES

It was a unanimous vote that we would all be present in 1916. —The weather was ideal throughout. So was everything else. —"Every Little Movement" by Partridge will never be forgotten. —As end men Merryweather and Partridge were *par excellence*.— The practical demonstration by Tucker of his cream separator was worthy of an Edison.—The chapter by Hurd and Rockwel on "Fish We Didn't Catch" has been expurgated from the official records.—The snoring contest on Friday evening was a great success; likewise the quieting effect of the Partridge tube.— The Tannhauser overture in the dormitory Saturday night was one of the most vivid and realistic productions of the age.—Official weights were: Merrill, 250; Fuller, 242; Tilley, 241 7-8; Locke, 217; Smith, 210; Lythgoe, 206; Stevens, 198; Rockwell, 193½; Chenery, 192; Merryweather, 190; Maclachlan, 189; Partridge, 187; Hurd, 180; Tucker, 174; Sumner, 171½; Wise, 167; Driscoll, 165; Hatch, 165; Grush, 146; Hersey, 145; Melluish, 137½; Sanderson, 117½; Thompson, barred on account of having no appendix.—The fireworks display on Saturday night was a grand

success and the fire balloons went up without a hitch, all due to the expert supervision of Rockwell.—Much pleasure was had in reading the letters from fellows who did not come. Charlie Hyde and Willis sent a wire from San Francisco.—Chenery and Stevens the only bachelors in the bunch, were carefully looked after and put to bed early.—No regular court martials were held, all minor offences being attended to by the officer of the day.

1897.

JOHN ARTHUR COLLINS, *Sec.*, 67 Thorndyke Street, Lawrence, Mass.

As announced in the April number of the REVIEW, the second class reunion of the season was held at the Colonial Club, Cambridge, on March 28. Dinner was served at 6.30 p. m., following which the members present spent the evening in the bowling alleys, which had been reserved for their exclusive use. A most enjoyable evening was spent.—Fifteen fellows were present on the evening of the smoker, April 10, about fifteen of the class met at the Copley Square Hotel for an informal dinner preceding the events at Symphony Hall. Wadleigh came on from St. Louis particularly for the Technology Congress. That is showing the Technology spirit in the right manner. Get busy, some of you fellows, who live within fifty miles of Boston, and do likewise. Later in the evening at the smoker, although no effort was made to keep together as a class, still off and on, the gang would gravitate toward a common center. Among those present were Bradlee, Hopkins, Worcester, Lamb, Bliss, Eames, Hammond, Carty, Jesse Hubbard, Breed, Humphreys.—The last gathering of the season occurred on Saturday, May 20, at the Tedesco Club, Swampscott. Through the courtesy of Bradlee the fellows were given the privileges of the club for over the week end. The attendance was disappointing, only five of the faithful showing up, viz., Hopkins, Breed, Worcester, Harry Sawtelle and Bradlee. The secretary at the last moment was unable to go. The fellows played golf or otherwise amused themselves, returning to Boston on Sunday afternoon.—The secretary received a letter from Potter, who until very recently has been at Aguascalientes, Mexico, with the American Smelting and Refining Company. He is still with this company as chairman of the southern department of the executive committee. He sailed for Europe on June 1, on a business trip. —Alden, who for a time has been with the New York and New Jersey Telephone Company at 15 Dey Street, New York City, has gotten "back to where life is worth living" as he puts it,—in other words, Boston. His home address is 21 Church Street Newton.—Charles B. Paine of Hallowell, Me., was married on April 26, to Miss Edith Partridge of Augusta, Me.—The photograph of Kendall Fairbanks which appeared in the April REVIEW,

was taken only the day before he went to the hospital to prepare for the operation. The good health of the man, aside from his peculiar affliction, made the sad termination the more pathetic.

1898.

ERNEST F. RUSS, *Sec.*, 70 High Street, Boston, Mass.

There have been two informal dinners of the class this spring, both of which were at the Boston City Club. The first dinner was on the occasion of the large reunion of all the classes held April 10, and after which, every one went to the Pop concert at Symphony Hall. During these festivities commemorating the granting of the charter there were about forty men in this class which attended the different functions. Danforth who came from Washington was probably the one who traveled the greatest distance to be present. The second dinner was the annual one preceding the Pop concert at Symphony Hall on the evening of June 6. At the dinner and the hall there were probably twenty-five men. It was decided at this last dinner that there should be two informal gatherings next year, besides the regular one in June, and it is sincerely hoped that each of these may have a large attendance. Notices will be sent out announcing the dates. At the time of the April 10 dinner, return postal cards were sent to the different men in the class, and the notes received therefrom were of much interest. We will give a few of them now, and another issue of the REVIEW will contain the balance. Lacy, Robert, is working on contracts for the Barge Canal and New York Central Railroad and states that the climate at that place is very bad for contract work, giving them only seven good working months in the year.—Guy, James R., has recently been elected principal of the industrial school for colored persons in Charleston, S. C. He would like very much to hear from any member of the class who is interested in this kind of education.—Bleecker, John S., is at Columbus, Ga., and still enthusiastic about the class of 1898.—Tompkins, E. A., has the exclusive sale of Columbia graphophones and records in Pittsfield and vicinity, and also has the largest stock of independent photographic supplies in Berkshire county.—Goldsmith, Clarence, is with the National Board of Fire Underwriters with headquarters in New York City. For the past year, however, he has traveled in the West inspecting the water works of San Francisco, Los Angeles, Seattle, Colorado Springs, Denver, etc. At present he is in Philadelphia.—Barker, Harrington, was recently elected vice-commodore of the Corinthian Yacht Club of Washington, D. C.—Goodrich, Miss Annie L., is now teacher in the West School, Malden, Mass.—Churchill, Durand, last year made a tour of investigation through Australia, Tasmania, Fiji Islands, Hawaiian Islands and Canada. He is consulting engineer at Port Lorna, Cal.—Dickson, J. B., writes that he is not dead yet.—

Wesson, P. B., has been a member of the Lowell City Charter Revision Committee the past winter and states that that body proposed a new charter which is now before the State legislature. Any politicians in the class will kindly take notice and give it a lift. —Chapin, E. S., had a daughter, Margaret Louise Chapin, born last June, but which we believe has not been noted in these columns before.—Jones, Dr. Harold W., has been for the past two years in Washington. His work is mostly surgical. His position is captain medical corps, U. S. A. He is principally at the Army General Hospital in that city.—Monteith, Arthur D., is still pursuing the same old profession behind the transit. He is at Vancouver, Wash.—Kendall, Robert E., can now be reached at Parlin, N. J., care of International Smokeless Powder & Chemical Company. He is at present holding the position of chief chemist at this plant, and states that the concern is controlled by E. I. duPont de Nemours Powder Company.—Meyers, David J., is an architect and has been in Seattle six years. He was associated with Mr. J. Graham under the firm name of Graham & Meyers but a while ago dissolved partnership and at present is president of the Washington State Chapter A. I. A.—Brown, Dickson Q., is the second vice-president of Tide Water Oil Company, 11 Broadway, N. Y. We quote direct from him. He writes: "Am well, happy, making money, going to Europe this summer, glad I went to Tech, was born single and am still unmarried. Whoop La!"—Koch, C. S., was married Jan. 11, 1911, to Miss Jane Nicholson of Wilkinsburg, Pa.—Byam, L. H., states he has a candidate for the class of 1933 in his family, William Melhuish Byam, born Feb. 15, 1911.

Cards have been received announcing the marriage on June 17, of Robert S. DeGolyer and Miss Eleanor V. Harris, a sister of President Harris of the Northwestern University. DeGolyer is associated with the firm of Marshall & Fox, architects of Evanston, Ill.

1899.

H. J. Skinner, *Sec.*, 93 Broad Street, Boston, Mass.

The class was well represented at the Congress of Technology, about fifteen men being present at the class dinner and smoker. Papers were read by Hinckley on "The Scientific Thought as Applied to Railroad Problems" and by Skinner on "The Debt of the Manufacturer to the Chemist."—Rickards has been appointed associate professor of Municipal and Sanitary Dairying in the College of Agriculture, University of Illinois. Rickards also announces that he is the father of a husky boy, Leighton Ransom Rickards, born June 8, 1911.—Brainard Taylor is in Galveston, Tex., acting as commissary of Second Provisional Regiment, with the rank of captain.—Hapgood is connected with the water department of the city of Jamestown, N. Y.—Milliken is located in Pasadena, Cal.

D. C. Churchill has returned, with his wife and two sons, to Ahmednagar, in India, where he has charge of the mission industrial work. We understand that although Churchill receives only the regulation missionary's salary, he was offered and has refused a $6,000-a-year position from the British government. Churchill is also well known as the inventor of a wonderful hand loom, which is used by the natives in weaving cotton, and which bears his name. In the early part of May he was among the speakers at a luncheon given by the Twentieth Century Club, Boston, and described interestingly the progress and the effect of industrial education in India.

1900.

INGERSOLL BOWDITCH. RICHARD WASTCOAT.
GEORGE C. GIBBS. PERCY R. ZIEGLER.
N. J. NEALL, *Sec.*, 12 Pearl Street, Boston, Mass.

The class of 1900 was well represented at the recent annual convention of the National Electric Light Association, held in New York during the week of June 1. Collier, who is chairman of a committee, read a paper giving the report of the committee on ornamental street lighting.—Penard attended the convention as a representative of the Boston Edison Company; Graff, representing the Simplex Electric Company; and Neall as his own representative.—On Friday evening, June 2, Neall met MacPherson on his way to assist in the rehearsal for Grant's wedding, which was to occur the next day. MacPherson was to be Grant's best man, and Grant was giving a bachelor's dinner at the Hotel Astor.—Only three 1900 men turned out for the Pop concert: Walworth, Reardon and Hapgood. Neall fully expected to be present, but was unexpectedly called out of town at the last minute on business matters.—Vogel was recently in Boston and gave some of his friends the benefit of a call. He is still at Buffalo and enjoys his work with the steel company.—Gibbs was ordained a deacon of the Episcopal Church on Tuesday, June 6, and was given the honor of assisting in the service by reading the lesson. He received his degree on Wednesday, the seventh, at Cambridge. Gibbs expects to spend the summer vacation in the east and will then leave for Oklahoma, where he will take up his first duties.

Lost. Somewhere between the State Department of Health, Harrisburg, Pa., and the College of the City of New York, New York City, one Frederick W. Witherell, better known as "Doctor," of what, nobody knows. No reward offered. Kindly inform the secretary of his address as mail addressed to him is being returned. —The writer of the class news in this issue sent out about thirty requests for items of interest from the fellows and he wants to thank the ones who responded, and takes this method of doing it. There were fifteen replies received.—Thomas D. Perry writes:

Technology is represented in Grand Rapids in only a limited way. L. L. Cavyan and the writer are the only two 1900 representatives and there are two 1901 men, Higgins and Campau. Campau, of the firm of Robinson & Campau, was the architect for the new Central High School building here, which has just been completed, an illustration of which I send you under another cover, so that really with Campau's hand on the artistic lever and mine on the business lever we have been able to give the city of Grand Rapids the worth of its money in this high school building. I was in Boston the latter part of March and tried to find time to look up more of the class than I did. I saw Walworth, Ziegler and L. S. Smith, and had a chance to see how the old Institute looks.

—Perry is business manager (whatever that is) of the Board of Education of Grand Rapids, Mich., and must be quite a politician by this time for he has held his "job" for a number of years.—And here's a line from Jouett. He doesn't seem to think that getting married is much news but it is. Anyway we all extend our best wishes.

I haven't seen anyone from the class in months and therefore know of no class news. As for myself I might say that I am to be married on June 5 to Miss Katharine Boyd of New York.

—Merrill, out in Easton, Pa., at Lafayette College, where he is "teaching the young idea how to shoot" (not the literal interpretation of the word "shoot" even if he was one of the officers in our famous battalion), comes back at us with a new one in shape of a class yell. We advise each class member to try it and let us have his opinion. There is no question about the need of a good class yell something like the "We are happy."

If the Pop concert could only happen a week later I would positively be there. As there has been talk of getting up a new yell [a proposition which should be enthusiastically endorsed] and suggestions invited, I humbly, and almost apologetically, submit the following, thinking it might be given a try-out at the class dinner:

Double O
Double O
Double O
O–O, O–O, O–O, O*
M. I. T.
Double O.

*To be yelled with hand vibrating over mouth, holding forefinger against lip and thumb against cheek.

But *please don't print it* unless it is approved by the fellows in place of "Boom-rah-ree." I move that publication of the Class Book be deferred until 1920.

—W. C. Dean, Course VI, has recently accepted the appointment to the position of expert electrical aid, Bureau of Construction and Repair, Navy Department, Washington, D. C. During the hot weather he will maintain his residence at Norfolk, Va., where his family are comfortably installed at "Cottage Pines" on Lafayette River.—We were glad to get the following from S. P. Brown. And from other sources comes the report that he's certainly "making good."

I have not been doing very much except trying to keep from freezing to death in the winter and roasting to death in summer, in an extremely "bum" office that

I built myself. When I was graduated from the Institute, I went down south in partnership with W. R. Collier, also of the class of 1900, and practised consulting engineering for three years; then I came north, did a few odd jobs in consulting work and went with the New York, New Haven & Hartford Railroad Company for a year. In 1905, I went with the United Engineering & Contracting Company of New York, first as resident engineer on the Port Morris Depression and Tunnel Work under St. Mary's Park of the New York Central Railway; later as their (U. E. & C. Co.) representative in consultation with the city of San Juan, Porto Rico, on public utilities and later still as principal assistant engineer for them in building the crosstown tunnels of the Pennsylvania railroad under Manhattan Island. In that work I had general charge of temporary structures and concrete construction, and later, of all work west of Fifth Avenue. When that was completed, I went abroad for some time to investigate European tunnel practice and made preliminary designs for the sewage pumping station in Havana for the Cuban Engineering and Contracting Company, and again in 1909, made another trip abroad to look up some more work for the United Engineering and Contracting Company.

In December, 1909, I went with the Tide-Water Building Company and Thomas B. Bryson as chief engineer to build section 11-A-3 of the Fourth Avenue Rapid Transit subway in the borough of Brooklyn, city of New York, where I still am. Finally, as an item of special interest, I expect to go to see Christie McDonald in the Spring Maid, tomorrow night with W. R. Collier of Atlanta, who is up here for the meeting of the Electric Light Association. I hope this itinerary will be of inestimable value to you.

—This letter from C. E. Smith, dated at St. Louis is certainly a "dandy" and he can rest assured that now we have "located" him he will be a regular contributor to these pages, and no more will he rest undisturbed.

Your letter of May 22 just received. For about eleven years I have flattered myself that I had successfully eluded the grasp of those searching for class news, as it did not appear that any of my doings during that period were worthy of publication. It appears now, however, that I am discovered and therefore found. This discovery is the direct consequence of my having remained in the same place so long, that is, for about four years, my movements during the previous seven years having been of sufficient frequency to prevent my discovery. I entered the Maintenance of Way Department of the Missouri Pacific Railway, August 1, 1907, and after about six months of general maintenance and improvement work in Arkansas and Louisiana, was called to St. Louis to assist in handling bridge matters, formerly handled by the Engineer Bridges and Buildings, whose office, on account of financial depression and other reasons, was abolished about that time. In September, 1909, I was made bridge engineer and since that time have looked after investigations, designs and construction of a large variety of work, including sub and superstructure of railroad bridges and any number of grade crossing eliminations. In this work I have been, and am now, ably assisted by the following Tech men: S. L. Wonson, 1901; C. P. Howes, 1904; R. D. Kelley, 1906; all of whom, including myself, are very much interested in the recently organized St. Louis Society of the M. I. T. No doubt you, as well as many others, feel that you need no introduction to the Missouri Pacific Railroad, in view of the amount of advertising this road has recently had. The road is about 7,200 miles in length, of which the bridges for about 5,000 miles are in such condition that they will carry any engine in the United States at full speed. Practically all of the lines are ballasted, several thousand miles are laid with 85 pounds rail and several hundred miles with 100 pounds rail. The system is located in the fertile and promising Mississippi Valley and extends from the southern Illinois coal fields on the east to Pueblo, Col., on the west and from Omaha, Neb., on the north to Lake Charles, La., near the Gulf of Mexico on the south, operating in the eleven states of Illinois, Kentucky, Tennessee, Mississippi, Missouri, Arkansas, Louisiana, Nebraska, Kansas, Oklahoma and Colorado.

The word "promising" in the preceding sentence is used advisedly. All are

agreed that there is promise of prosperity and success in this great southwest, but the railroads in this section are not suffering from it. The volume of traffic, throughout this more or less sparsely settled district, is not so great as throughout the east and north, the result being lower gross earnings per mile of road. In addition, rate and other legislation by the Interstate Commerce Commission and general adverse legislation by city, county and state boards, all of which result in increased expenditures and decreased gross earnings, have affected the railroads in this section probably more than in any other, as is evidenced by the fact that other roads in this section, comprising many thousands of miles of lines in addition to ours, have not paid dividends for several years and are having a hard time to make the income equal to or slightly greater than the fixed charges. These conditions have brought about the necessity for a high degree of scientific management. So much money must be spent for improvements ordered by civic boards that result in an increase in the annual expenditures with no corresponding increase in income, that in order to keep the balance on the right side of the ledger it becomes necessary to practice all possible economies and to carefully analyze all proposed improvements, to make certain that the result will be a net increase in earnings The future field for engineers looks more promising in view of the recent selection of Mr. B. F. Bush, an engineer, as president of this system, and his appointment of Mr. E. J. Pearson, an engineer, as vice-president in charge of operation. With this full and free confession I hope that I may be entitled to eleven years more of security.

Keay writes from Montreal:

Failure to send in any news of myself during the last two years has been due to that becoming modesty which characterizes all Tech men, rather than from a lack of material. The close of this session completes my fifth year as a professor in the department of railways, in McGill University, and my third as head of the railway department. The task of developing the transportation course in the faculty of applied science at this institution has called for no end of work due largely to the fact that we were among the first to attempt such a course. The larger Canadian railways have very generously backed the enterprise, and I am glad to say that it is now running smoothly and successfully. The railway companies are giving our transportation students practical training during the vacations, finally taking them over after graduation, and best of all, the men are making good. The summer of 1909 I spent in England and on the Continent, studying European railway methods. Contrary to the general impression, I believe that we may profit a lot from European experience, particularly in the matter of safety in train operation. During a little side trip in Switzerland, I came across a very ardent admirer of Tech in the person of Mr. William Denny, of the well known firm of Denny Brothers, ship builders on the Clyde. His son is a graduate in '08, and he says there is nowhere a school in the class with Tech. Last summer I spent a considerable part of the time on a test of one of the Canadian Pacific Railroad Mallet compound locomotives, running between Field and Revelstoke, through one of the finest sections of the Canadian Rockies. Having missed a number of Tech and class reunions has been a matter of regret to me, but I'm always with the fellows in spirit, at least. There are a number of Tech men here in Montreal, and I am going to undertake to get a Tech club under way. The time is ripe.

Here's success to the new Tech Club of Montreal:
Here is a letter from Keith:

Barker, Course VI, 1900, is here at Los Angeles with the Board of Public Utilities and I have seen him several times. It was my fortune to be here during the recent convention of the Institute of Electrical Engineers and the local members certainly did things up brown and gave the visiting members a bang-up good time. Mr. Miller, one of the members of the firm I am with, and I, have been making an appraisal

of the telephone plant of the Pacific Telephone and Telegraph Company. We are practically finished now and expect to return to Chicago in the course of a few weeks.

If the natives of California think that state is next to heaven what must the natives of Texas think of that state if this letter from Holbrook is correct. Holbrook, come back where the east wind blows.

You can't expect a man to know much or learn anything new when the thermometer on his desk stands at 106 every day as it has done here lately. Have been here five years now and every one is hotter than the last. If you want your friends to get a guaranteed course of training for the hereafter just send them to Texas. Degree of "T.T.D." (Doctor of Torrid Temperature) awarded on request, on payment of tuition fee (one ton artificial ice) in advance. A few Tech men in Fort Worth and Dallas formed a preliminary Alumni Club last winter, but the removal of the moving spirit elsewhere caused the matter to drop. If the rest of us survive the "heated term" I am going to try it again later on and see if I can't get transferred somewhere.

Collier from Atlanta, Ga., sends us the following. We hope to see him up north at the five-year reunion, when the new site is dedicated.

While in New York on my recent trip, I met S. P. Brown, Course II, who is now chief engineer of a section of the Brooklyn subway which is being built. Brown is now living in Lawrence, L. I., and has a youngster, Stephen Luce Brown, who is about one and a half years old. Harry Leslie Walker, Course IV, is doing architectural work, under the firm name of King & Walker. They have offices in Atlanta and are doing a great amount of fine work. Billy Hough is at the head of William B. Hough Company, Chicago, Ill., and was in Atlanta several weeks ago. He seems to be prospering and is certainly getting fat. As for myself, I am still contract agent for the Georgia Railway and Electric Company, and am kept so busy that nothing out of the ordinary ever happens to me.

Maxfield tells us that he is just starting to pump out a big coffer dam around a lock at Buffalo and expects to pump 11000 gallons per minute all summer while they are placing the gates. The lock is 700'x45'; the gates, of which there are five, weigh 150,000 pounds each and are operated by electricity.—Bill Stone writes that he is at the same location in Newburg, on the construction of the concrete aqueduct and a steel pipe siphon of the Catskill aqueduct.—Redman is working for the civil engineer at the Naval Training Station, Newport, R. I.—Southworth down in Washington writes Wastcoat the following. He ran into him in —?— in the capitol city a number of years ago.

I have been here at the Bureau of Yards and Docks now, four years and have had a steady diet of hospital planning and specification writing that has brought me into touch with some of the best hospital work in the country. The Bureau is designing the Navy hospitals for the Bureau of Medicine and Surgery and has turned out work to the amount of several millions of dollars. The hospitals are located all over the country from Pearl Harbor, Hawaii, to Portsmouth, N. H. One is being built now at Chelsea which will be up-to-date in every respect. In connection with the

hospitals there are usually quarters to be designed for the medical officers, for the hospital corps, and for the nurses. The work is varied and interesting and does not get tiresome or monotonous.

—Bobbie Howe, the same old boy as ever sends us some pictures which we should like to publish. The first one shows Neall and Howe playing Indian behind a sand hill at Howe's home at Gloucester and the second shows Neall fast asleep on the doorstep, entirely played out, the strenuous life too much for him.

Your dun arrived, and can help but little, as I lead a most lady-like existence. Took Neall down to Gloucester for a week-end party, and made him wheel rubbish and other stunts, while digging in the garden myself. Enclose a couple of pictures and films, which you can use or not, but return at your convenience. The tramp is Neall. Wish I could help you, but I am pretty quiet, bad business is picking up now a bit. Won a golf cup, by good luck, s . amuse myself out doors.

Haugh writes us as follows from Chicago:

Inasmuch as I am too busy to be creating any history at the moment of interest to yourself or anyone else, I am enclosing my card, which I hope will be satisfactory.

This letter from Davis leads us all to believe that some day from a town in Indiana will come forth a man famous either as a poet or as an author of blank verse, or possibly a humorist. Who knows?

I thought Taunton was a big place, but where's your street and number? Postmaster a friend of yours? This gentle way of opening my letter to you was adopted purposely to break gently to you the fact that I've no news whatever for your six pages of the REVIEW. Out in this neck of the woods, we have to keep hustling in order to stay where we were in the beginning; and I'm not up to the pitch of the superstrenuous which makes one go ahead. Therefore I've done nothing—seen nothing—heard nothing—know nothing—*am* nothing. So when you come down to the D's in the alphabet of the class, drop a tear and breathe a sigh and reverently pass on.

HARRISON EVERETT ASHLEY

Prof. A. V. Bleininger contributes the following to the memory of Harrison Everett Ashley, from *Rock Products*, February 22, 1911:

The American clay working fraternity has suffered a great loss in the death of Harrison Everett Ashley which occurred February 4, at Pittsburg, due to meningitis, following two operations for mastoid abscess. He was taken away in the midst of his labors from the work which he loved so well. His death was a great shock to his many personal friends as well as to all clay workers concerned in the welfare of the industry and its higher development.

Harrison Everett Ashley was born at New Bedford, Mass., August 2, 1876, of good Puritan ancestry, the son of A. Davis and Caroline Morse Ashley. As a child he was studious and always eager to get at the bottom of things. He was educated in the public and high schools of New Bedford and later attended the Massachusetts Institute of Technology, taking the course in chemical engineering. At the Institute he was a close student and exceedingly thorough in all he did. He was graduated in 1900 with the degree of S. B. in chemical engineering. Mr. Ashley, during his college course, had specialized in metallurgy and consequently took up the tech-

nology of foundry metal and steel after leaving the Institute. He held several positions in steel plants and foundries, but meanwhile became exceedingly interested in silicates, with special reference to slags and clays. Upon corresponding with Professor Orton, he was advised to secure a practical position. This he did, and entered the employ of the Homer Laughlin China Company, at East Liverpool, Ohio. Realizing the advisability of securing special training in this line, he then took a special course in ceramics at the Ohio State University under Professor Orton. During his stay at the university he was honored by the election to Sigma Xi, an honorary scientific fraternity. After completing this work Mr. Ashley returned to his position at East Liverpool, where he was placed in charge of the kiln work, and later of all the raw materials. After the construction of the great pottery plant at Newell, W. Va., the company transferred him to the latter place, where he tested all the materials used and had charge of the purchasing department of this large concern.

In 1908 he received the appointment as assistant ceramic chemist with the Technologic Branch of the U. S. Geological Survey, and in 1910, upon the transfer of the work to the Bureau of Standards, he was promoted to be associate chemist. In this field he enjoyed the opportunities offered to the utmost and worked unceasingly in developing new principles. He realized promptly the value of modern research in regard to colloidal chemistry and proceeded to study the clays and their properties from this standpoint. He was successful in developing new lines of thought which he applied not only to clays, but also to lime hydrate, metallurgical slimes, and other substances.

Mr. Ashley contributed freely to technical literature and he has written articles and papers upon the following subjects: The study of tellurium alloys; the use of the triaxial diagram in the thermal study of slags; a suggested method of studying the gas engine cycle by means of a logarithmic triaxial diagram; the production of lustre effects on glass; the effect of various lime compounds in a white ware body; the diagrammatic study of glazes as regards their crazing and shivering limits; the testing of pottery materials; a testing method for pottery plaster; the colloidal content of clays; the control of the colloids in clay; the precipitation of metallurgical slimes and a number of other papers.

Harrison Everett Ashley represented the highest type of mankind; he was an exceedingly kind and genial nature, full of the old-fashioned Yankee humor, of absolute and fearless integrity, unselfish in his labors, always ready to help another and most important of all, a sincere Christian.

He met death bravely and his lips uttered no complaint, though conscious until his spirit departed. His last words were of cheer to his loved ones.

Mr. Ashley left a widow and two young children. His death has destroyed an ideal and happy union of four years duration, he having been married to Miss Eva Susan Greenamyer, of Leetonia, Ohio, on July 3, 1906.

Those that knew him mourn the good man, the loyal friend, the able investigator and scientist, the unselfish worker, the devout Christian. His memory will continue to live with us.—*Rock Products*, February 22, 1911.

(Mr. Ashley's splendid work in connection with the lime investigations of the Bureau of Standards, together with the patience and kindness that were always a part of his character have endeared his memory to many of our readers. With them we join in the sentiments so well expressed by his companion, Professor Bleininger.—Ed. *Rock Products*.)

1901.

ROBERT L. WILLIAMS, *Sec.*, 154 Magazine Street, Cambridge, Mass.

Preceding the smoker during the Congress of Technology the class had a dinner at the Rathskeller April 10. The dinner was

a most enjoyable one and the following men were present: J. T. Scully, W. M. Curtis, E. F. Brigham, R. C. Robinson, W. C. Arsem, W. A. Read, M. Estabrook, J. Colman, W. C. Appleton, Arnold, F. R. Boyd, A. W. Rowe, H. P. Macdonald, J. F. Monaghan, H. T. Chandler, W. W. Walcott, P. Player, and R. L. Williams. —On Decoration Day the annual workhorse parade was held in Boston with 1,365 horses in line and the Lawrence gold medal, the big prize of the day, awarded to a four-horse team, was captured by the team belonging to John T. Scully.—Once more I wish to remind those who have not done so to kindly send in their data for the decennial record book. While we have heard from a goodly number we want to hear from all those who have been associated with the class as well as those who were graduated.—The class is planning an outing June 24 at Nantasket Beach in celebration of our tenth year out and the fun will probably be over by the time this appears in print.—Antoine B. Compau is now located in Grand Rapids, Mich., where he is a member of the firm of Robinson & Campau, architects. He has traveled extensively in Europe for two years.—W. S. Pepperell, as traveling salesman for the Draper Company, Hopedale, Mass., has to do with the complete organization of textile mills beginning with the organization of the company to the final operation of the mills.—A. K. Trenholme is an instructor in forge shop practice and machine shop practice in Washington high school, Portland, Ore.—The following changes in addresses have been recently received: A. J. Eveland, 60 Congress Street, Boston, Mass.—W. I. Martin, 5212 South Park Avenue, Chicago, Ill.—P. W. Moore, 1621 Judson Avenue, Evanston, Ill.—W. T. Aldrich, 31 West 12th Street, New York, N. Y. —L. M. Backus, 722 Leary Building, Seattle, Wash.

ROBERT S. LITTLEFIELD

It is with deep regret that I have to announce the death of one of our best and most loyal classmates, a member of the class executive committee, Robert S. Littlefield, who passed away May 12. He was born June 9, 1878, in Somerville, Mass., was graduated from the Somerville High School in 1896 and from Technology in 1901. His course was Naval Architecture and after graduation he went to Cramp's Ship Yard in Philadelphia. In 1903 he entered the firm of James H. Roberts Company, manufacturers of transmission machinery, Cambridge. He was married in 1905 and lived first in Malden and later in Newton Centre.

1902.

F. H. HUNTER, *Sec.*, 75 Park Street, West Roxbury, Mass.

On Monday, April 10, the class attended the smoker, which formed the feature that evening of the Congress of Technology.

A dinner was served at the Boston City Club with the following men present: Ames, Ballard, C. H. Boardman, Jr., Bourneuf, George, Hall, Hamblet, Hunter, Mahar, Marvin, Millar, Nickerson, Pendergast, Robinson, Sawyer, Shedd, Simpson, Stillings, Thurston, Walker, Westcott, Whitney, Whittet, Williams and Williston. There was no formal program, but a very good time until the hour arrived to leave for Symphony Hall. At the smoker, besides the above, were C. Boardman, Childs, Fitch, Fletcher, Geromanos, O'Neill, Patch, Pitts, Sears and Starr. Mullaly who was playing in the band, got away long enough to shake hands all around with the bunch. With thirty-six men in the hall, it was the largest assembling of '02 since the All-Tech Reunion in 1909, and it was pleasant to see so many classmates who had not been out for some years past. At the banquet the following evening, were Ballard, Childs, Everett, Farmer, Geromanos, Marvin, O'Neill, Joe Philbrick, Pendergast, Starr, Howard Turner and Rob Whitney.—At Chicago on the same evening, at the dinner of the Northwestern Association, were W. N. Brown, Currey, Foote, Lockett, Nash, Reed and Reynolds, which Lockett reports as the largest gathering of '02 men, on record, in Chicago.—The annual dinner of '02 in New York was held at the Technology Club on April 22. There were present Alsberg, Annett, "Dimmy" Bartlett, Ned Baker, Davis, D. R. Franklin, A. E. Hansen, Mathesius, Place, Grant, Taylor and Wemyss. This is also a record in numbers for New York. The dinner was followed by a pleasant social evening. The annual meeting and class supper was held at the Hotel Oxford, Boston, on June 6, as a preliminary to Tech Night at the Pops. The following classmates were present: Collier, Fitch, Hall, Haskell, Hamblet, Hooker, Hunter, Mahar, Millar, Mullaly, Nickerson, Pendergast, Joe Philbrick, Shedd, Stillings, Robinson, Thurston, Whittet, Rob Whitney, and "Doc" Williams. Haskell, who has not been at a Tech affair for several years, was warmly welcomed. The business session was opened by the presentation to the secretary of a handsome loving cup with the inscription: "Presented to Frederick H. Hunter by the Class of 1902, M. I. T. June 6, 1911, In Recognition of the Good Fellowship Resulting from his Efforts." Though completely surprised the secretary tried to respond to "Doc's" speech in making the presentation. The cup, which was of generous size and full, was passed around the table, that all might share in the "Spirit" of the affair.—After the cup was emptied, and the secretary had got down to earth, the business of the evening was concluded by the unanimous election of the following officers for one year: President, R. B. Pendergast, vice-presidents, for Boston H. E. Stillings, for New York Grant S. Taylor, for Chicago Kenneth Lockett was re-elected. For secretary and treasurer Hunter was re-elected for a second term of five years, and after a long drawn out contest attended by much hard feeling, Arthur Nickerson was re-elected

assistant secretary. At quarter of eight, a parade was formed and with the big blue banner flying, Mullaly on the drum and Hall on the bugle, we marched up Huntington Avenue in defiance of the drizzling rain. Our advent at the hall drew much applause as we were the first class that ever paraded into the Pops with a drum. Ames, Crowell and Lewis joined us at the hall, and Simpson was visible in the '02 section of the balcony. The Pops, though very enjoyable, were quieter than some years, but '02 was not to blame for that.—Other class news has come in as follows: On April 13, a dinner of Tech men was held at the Kojunsha Club at Tokyo in honor of Jasper Whiting, '89. Seven men were present out of the fifteen in Japan, and steps were taken to organize a Tech Club of Japan. Report of this meeting is given elsewhere in the REVIEW, as McIntyre, '02, was at the dinner and sent in a report. His name is the only one besides Mr. Whiting's that the secretary dares to try to write.—Cates is superintendent of mines for the Ray Consolidated Copper Company, at Ray, Arizona.—Crowell is with Stone & Webster, as the latter are now handling the "Boston and Providence" proposition.—"Doc" Williams is now "Prof." Williams, having been elected to the Faculty at the recent meeting of the Corporation.—Hall is with the Kinney Manufacturing Company at 100 Boylston Street, Boston.—Matthies writes that he is doing general engineering work for the Western Electric Company in Europe, having headquarters with the Bell Telephone Company, 18 Rue Bouderwyns, Antwerp, Belgium. Mullaly's address is 18 Worcester Square, Boston.—Stillings, 11 Westminster St., West Somerville, Mass.—Lockett, by the renumbering of streets in Chicago is now at 14 W. Randolph St.—Grant Taylor's address is 117 Remsen St., Brooklyn; he is with the Corrugated Bar Company, at 17 Battery Place, New York City.—Millar has moved his office to 178 Devonshire St., Boston. —"Doc" Williams was re-elected as secretary of the Technology Club at the annual meeting on May 9, and L. E. Moore was made a member of the Council.—Herbert S. Walker writes from the Ewa Plantations, Ewa, Hawaii, as follows:

> Am mailing you a publication which has been my main excuse for drawing a salary during the last few years. I left Manila last July for Europe via China and the Trans-Siberian railroad; took a motorcycle trip from Bruxelles to Gibraltar, stopping over for a few days' visit with Lind, '02, in Paris. My present address is not a very permanent one and I really have no idea where I may be located next year, probably somewhere in the tropics.

—Archie Gardner writes from Estacada, Ore., that he is engineer in charge for the Puget Sound Bridge and Dredging Company on a large hydro-electric development which they are constructing for the Portland Railway Light and Power Company. He reports attending the meetings of the Technology Club of Oregon and meeting Daly and Edwards there.—Arthur Clapp and Jimmy Avery

have both been seriously ill with pneumonia in recent months, but both are now, happily, recovered.—Warren Taylor writes from Union College, Schenectady, that though the engineering school is small, they have just moved into a new building and are now well equipped to handle their work.—The engagement of Jason Mixter to Miss Dorothy Fay of Boston and of his brother Charles to Miss Helen McIntosh of Milwaukee will interest all members of the class. The former engagement was announced soon after the last April REVIEW went to press, and the other a few weeks later.

1903

F. A. OLMSTEAD, *Sec.*, Oregon City, Ore.
R. H. NUTTER, *Asst. Sec.*, Lynn, Mass.

The class was well represented during the Congress of Technology in April both at the smoker and at the dinner. Previous to the smoker the fellows gathered for an informal dinner in the Brunswick Café, at which the following were present: C. H. Avery, Loughlin, Taylor, Comer, Foster, Pelton, MacDonald, Capelle, Eaton, Peaslee, Sears, Thwing, Bradshaw, S. P. Brown, Fales, Wing, Davis, Ferguson, Greene, Bartlett, Lyon, Jackson, Haddock and Nutter.—The 1903 men who attended the dinner at Symphony Hall were: Eaton, White, Taylor, Eustis, Scholtes, M. H. Clark, Denham, Foster, Mason, G. M. Green, and Haddock.—On June 6th, before going to Symphony Hall for the annual Tech night at the Pops, the boys again assembled for dinner at the Brunswick. George Swett ordered this dinner and he certainly deserves a vote of thanks from the class for it was about the finest dinner 1903 has ever enjoyed. The following were "on deck": Sears, Gleason, McInerney, Fales, S. P. Brown, Wing, Scholtes, Thwing, Magnitzky, Nutter and M. H. Clark. Although there was a cloudburst near Copley Square, the rain did not dampen the enthusiasm in the least. It was unanimously voted to proceed with plans for a day's outing of the class to be held during June or July, and a committee consisting of Thwing, Sears and Gleason was appointed to arrange for this affair. When the plan has been worked out notice will be sent to every member of the class and every 1903 man is expected to attend. No excuse for absence will be acceptable. If business interferes, "cut out the business."—The following new addresses are noted: Harold Osborn, North Adams, Mass.; P. B. Rice, Williamsport, Pa.; Irving Williams, Olean, N. Y.; J. M. Gammons, Eng. Dept. Mo. & Ks. Tel. Company, Kansas City, Mo.; C. M. Hardenbergh, Southwestern Milling Company, Kansas City, Mo.; W. C. Avery, 53 Linden Street, Newton Upper Falls, Mass.; Hewitt Crosby, Atlantic Gulf & Pacific Company, Whitehall, N. Y.; F. G. Cox, Dallas, Tex.; O. P. Scudder, San Francisco, Cal.

The class wishes to extend congratulations to Alexander Healy

of Ogden, Utah, who was married April 4 to Miss Edith Holden of Boston. Mr. and Mrs. Healy went South for an extended wedding trip, after which they returned to their new home in Buffalo, Wyo.

1904.

EVERETT O. HILLER, *Sec.*, Technology Chambers, Boston, Mass.
ADDISON F. HOLMES, *Asst. Sec.*, Mass. Inst. of Tech., Boston, Mass.

The most important events of general interest since the last REVIEW was issued were those of the Technology Congress. Record of the events has appeared in so many different forms that all must be familiar with them. 1904 was well represented, about twenty men attending the class dinner and Pops while about half that number attended the banquet. Class headquarters were at the Copley Square Hotel where we gathered before dinner on the first night of the Congress. A satisfactory and unusually "live" dinner was enjoyed by all, a large table accommodating all in the regular dining room of the hotel. The fellows stuck together and enjoyed a good old-fashioned Tech night at the Pops. The banquet was less hilarious, but very interesting and inspiring. The New Technology was the spirit of the evening and undoubtedly received much impetus from the enthusiasm and publicity of the Congress. Plans were matured for the annual week-end excursion to North Scituate where we were to stop at the Cliff House and have the use of the local country club links and courts. A few days before the date set, we received notice that, due to crowded conditions for its own membership, the Country Club privileges would not be available. This with the comparatively small number of men who sent in favorable replies led to the indefinite postponement of the event.—We have word from George R. Ainsworth that he is with the Edward F. Caldwell Co. of 36 West 15th Street, New York. He has been with this company since graduation in the manufacture of gas and electric light fixtures.—We have the following from Guy C. Riddell:

> I have been out here at the smelter at East Helena ever since the fall of '04 working along through the various departments and was lately made superintendent of the plant, succeeding Philip A. Mosman, another Tech man of '87. The East Helena plant is one of the chain of A. S. & R. Co. smelters in the United States and Mexico. We do a custom lead business here getting away with about 70% of the total output of the Cœur d'Alene district of Idaho. I have been in Boston only once since graduation. In 1907 I went back to get married. Mrs. R. (who was a Newton girl) likes Montana and the northwest fully as well as I do. This is saying a good deal.

—R. B. Pendergast has got a bump of loyalty. He was three years with '02 and is now their president. He was graduated with '04, and has always shown much interest in '04 affairs, even to the extent of retaining his membership in the class organization, and payment of dues. We respect the prior claim of '02, but are

glad to note his fraternal spirit for both groups with whom he was associated. We shall always welcome him as a classmate. —We have the following from Sperry, Boulder, Colorado, which is here quoted in full:

There is not much show of this ex-member of '04 landing at the reunion this year, but he wishes he could be there to frivol with the fortunate ones that do appear, just to show that the years since leaving Tech have not quenched in him what the poets name "the fire of youth." Best wishes to every one of you! The circulars I get unite in asking for personal items so here's a résumé:

As some of the men in the class may remember, I came down with consumption while at the Stute and had to come out to Colorado the summer of 1903. Since that time I've been trying to get a new start in life with the aid of this fine climate. Last June I was graduated from the University of Colorado, Boulder, Colorado, receiving the degrees of Bachelor of Science in Civil Engineering, and Bachelor of Arts. At the close of the year I was one of those elected to the honorary scientific society of the Sigma Xi, and at Commencement played the part of Benedick in the senior play "Much Ado About Nothing." The senior play, usually a comedy of Shakespeare's, is given each year under a group of trees on the campus. Thanks to co-education the senior men have no chance to acquire feminine grace in the women's parts, as some of us had to do in the Tech show. I have not had much chance to connect with the members of 1904 while here, but have always tried to keep up with Tech affairs, though not able to graduate there, and hope when I get the engineering job I am now hunting for that fortune will bring more old Tech men my way.

—There is little to be added to what the daily papers have told of the extraordinary air feats of "Volts" Ovington. He is consistently carrying that which seems to be his life policy *i. e.* being in the lead. It is a habit he got as a hurdler and general athlete, as an electrical specialist and a motorcycle expert, and finally as the most sensational aviator in America if not in the world. Here's the heartiest wishes of all his classmates for safety and the brilliant success which his nerve and exceptional mind ought to have as its reward! Congratulations on his recent marriage are in order and sincerely offered. The following is taken from the *Record:*

Earle C. Ovington, Boston's newest aviator, is a Technology man and also a graduate of the Blériot flying school at Pau, France. That country, he is convinced, is the place for anybody to study if he is to make any record in aviation. The Frenchmen have both the great variety of machines and speed. Ovington is looking for 140 miles an hour at least in 1911, and indicates that he is ready to drive one at that rate. He expects to go out for a number of cross-country prizes during the summer and fall.

—Phil Sweetser was married on May 6 to Miss Helen Bradford Pratt at Newton Highlands, Mass. Mr. and Mrs. Sweetser are now at home to their friends at 130 Lincoln St., Newton Highlands, Mass.—We were pleased to receive the announcement of the marriage of William Walter Cronin to Miss Rosemary Hughes at Syracuse, New York, on April 28. They are at home after July 1, 207½ West Borden Ave., Syracuse.—Some of the asides noted on the Technology Congress return post cards were

of much interest to the secretary. Herewith some are quoted. —Lounsbury: "Am trying to find out which class I belong to. Pay dues in both and love both '03 and '04. No chance to get East in 1911. Too busy bringing up a new co-ed and doing other stunts in the great northwest."—Galusha, Plymouth Building, Minneapolis, Minn.: "It is *not* my present intention, etc.—How I hate to write it!"—W. J. Gill, Jr., Washington, D. C.: "Am mighty sorry I cannot be on hand."—Lee Phillips: "I regret that my geographical location compels me to answer negatively to all your inquiries."—These with many others show a live interest among the classmates at a distance. The spirit shown should be reflected upon by those members of the class located near Boston who show so little interest in class affairs.—"Gussie" Munster has just been promoted to engineer of tests for the New York, New Haven & Hartford R. R. with headquarters at South Terminal, Boston. It is a just recognition of extremely faithful and hard work and heartiest congratulations are offered. The position is an important one and places the one who occupies it in high standing professionally.—The secretary is now located as above noted and it is his earnest wish that any '04 men who come to Boston will look him up.—The following changes of addresses have been received: Edward L. Edes, North Western Pacific Company, Dyerville, Cal..—G. Neville Wheat, 506 Fairview Avenue, Houston, Tex.—Stephen E. Keiffer, 78 The Uplands, Berkeley, Cal.— W. Brenton Boggs, 430 Sterling Place, Brooklyn, N. Y.

William Stickney

Memorial services were held at Trinity Church, Newport, R. I. for William Stickney of New York, who died suddenly May 27 in Guatemala. The *Boston Herald* prints the following account of his life:

William Stickney was born at Bournemouth, England, in 1877. He attended Cutler's school in New York and was graduated from Harvard with the class of 1900. He then spent three years at the Massachusetts Institute of Technology studying engineering and naval architecture, and completed his training in the latter branch at Glasgow University, Scotland.

After spending three years at the Fore River Shipbuilding Company at Quincy, he left for Telluride, where he became interested in a mining proposition. It was here that he met with an unfortunate accident while out riding and fractured his skull. From the effects of his injuries he never completely recovered.

In November, 1909, he joined the engineering force of the Panama canal, but as the work entailed too severe a strain on him, he became identified in February of this year with the United Fruit Company, in whose service he was when he died.

While in Harvard, Stickney was a member of the Hasty Pudding Club, Zeta Psi and Porcellian clubs, and was a member of the Tennis and Racquet Club of Boston. He was universally popular wherever he went. Always much interested in all forms of sport, he was especially keen about tennis and yachting.

His unfailing geniality, keenness of mind and quiet sense of humor endeared him to all who came into contact with him, and his sudden death will deprive many of a genuine friend.

1905.

GROSVENOR D'W. MARCY, *Sec.*, 246 Summer Street, Boston, Mass.

As usual we have several weddings, etc., with which to begin the '05 notes for this issue. Charles H. Clapp and Miss Mary Regina Brennan were married at Devil's Lake, North Dakota, on April 19. Their address will be 18 Atlantic St., South Boston. —Gorham Crosby writes from New York, that George I. Rhodes married Miss Olive Parker Wallace of Hillsborough, N. H., on May 11, also that he was visited by Lovell H. Parker with his wife and year-old daughter, Margaret. Parker is assistant state engineer, at Albany, N. Y.—Harry M. Lynde was married on June 28 to Miss Amy L. Edmester of Danvers, Mass. Lynde is now at Walden, N. Y.—Samuel Shapira and Miss Rose Guterman were married in New York City on June 4.—J. B. Reinhardt and Miss Alberta H. Laine were married on November 29, 1910. Reinhardt's address is 41 Joseph Avenue, Rochester, N. Y.—The engagement of Roger P. Stebbins and Miss Ada G. Walker of New York is announced. Stebbins is now at Groton, Conn., where the Electric Boat Company have moved their plant.—Charles H. Johnson announces the birth of a son, Alan B. Johnson, May 10.—Harry P. Charlesworth also writes us of the birth of a daughter, Rosemary, May 16, and E. W. Washburn reports the arrival of a son, William deVeer Washburn, born May 20.—Irving H. Cowdrey is trying to reconcile his friends' statements that his daughter, Corinne, born October 8, is a pretty baby and looks like her father.—Jimmy Barnes writes: "We have a new girl in our family, Mary Ann Barnes, born April 21. Am glad '05 showed up so well at the Congress, as I've always had a sneaking notion that '05 is the best class there ever was, anyhow." This makes another sister for the class baby.—We learn with pleasure that our old friend and confirmed bachelor, Bob Lord, has finally succumbed, bought a sideboard, and will soon lead to the altar Miss Rebecca Poole, of Westbrook, Maine.—'05 men are beginning to show up in public life, and now and then get into the news columns.—Oscar C. Merrill has been appointed chief engineer of the U. S. Department of Agriculture, forest service. He is in charge of all the engineering and water-power work of the service, with headquarters at San Francisco. The field is divided into six districts, with a district engineer and headquarters at Missoula, Ogden, Denver, Albuquerque, San Francisco and Portland. The chief work consists of examination of power projects and the negotiation of leases. About a half-million horse-power will be handled this year.—The following was clipped from a Boston daily:

> Robert N. Turner of Waltham is now in his second year in the house, and has made his mark as a brilliant and able debater and a young attorney of high character. A report having spread that he could not afford to neglect his practice to take a third year in the house a number of his constituents are starting a movement to

urge him to reconsider. He was one of the most valued members of the judiciary committee last year, and this year is a member of the committees on election law and on education.

Bob has done mighty good work on several important bills, notably the Bar and Bottle bill, the Peaceful Picketing bill, and of especial interest to us, the bill for State Aid for the Institute.—Harry M. Nabstedt is engineer and superintendent of Public Works for the town of Stoneham.—Ralph R. Patch is commissioner of Public Works for the third year, and says the whole responsibility of running the highway, water, and sewer departments is up to Nabstedt, that he is making good, and that it is a great help to him to have a man like Nabstedt in the position of superintendent. —The Boston papers have lately been filled with the exploits of two '05 men who have been practically the whole show at the Waltham Aviation Meet. Earle F. Ovington, who started out with '04, but realized that to become famous he should take his last two years with '05, has been performing wonderful stunts with the Blériot monoplane, equipped with a 70 HP Gnome motor, which he brought back from France this spring. Hs has been timed up to 70 miles an hour, carried messages to Taft, Foss and Fitzgerald, and is only waiting for someone to put up a $10,000 prize to fly from Boston to New York.—Harry N. Atwood, who was with us our freshman year, is flying a Burgess-Wright biplane. He duplicated most of Ovington's stunts, and as a finale relayed several newspaper men from Waltham to Lowell, Lawrence, Manchester, Concord and Lake Winnipesaukee, making over 65 miles an hour at times, on the way.—Robert F. Luce is now commanding officer of the U. S. S. *Romblon* in the U. S. Coast and Geodetic Survey Service. He has charge of the combined field work in triangulation, topography, and hydrography among the islands near southwestern Luzon. His address is C. & G. S. Office, Manila, P. I.—J. A. Pitts is back on a six months vacation from Johannesburg, South Africa, where he has been since graduation, with Frazer and Chalmers. He says it seems too good to be true to be back again.—C. A. Emerson, Jr., is principal assistant engineer with the Pennsylvania Department of Health, at Harrisburg, Pa.—Joe Brown is N. Y. manager for the Sullivan Machinery Co. He is trying to help the city build its new aqueduct, and hoping for a new subway.—Arthur Belding has gone over to London as assistant manager for the same company.—Edward C. Smith is superintendent of the Toronto factory of the Canadian National Carbon Co., Ltd. He was married August 15, 1908, to Miss Edna Grace Fowler of Fremont, Ohio.—W. G. Houskeeper is engineer in charge of equipment and manufacture of Westinghouse-Cooper-Hewitt Mercury Rectifiers, with the Westinghouse Lamp Co., Bloomfield, N. J. During the past three years he has invented and developed a semi-automatic machine for making

tungsten lamp filaments in long lengths used in all "Wire Type" Westinghouse tungsten lamps. With H. S. Dunning he invented and developed a "Watts-per-candle" photometer for instantly and automatically rating incandescent lamps.—Z. Carleton Staples is master in commerce and law at St. John's School, Manlius, N. Y.—E. L. Hill has been appointed superintendent of the electrical cable plant of the American Steel and Wire Company at Worcester.—Bill Motter is manager of the new Canada Iron Mines, Ltd., with headquarters at Trenton, Ont.—W. S. Richmond has been for five years with the U. S. Lake Survey, and is now in charge of the hydraulic party of that service. His headquarters are at Detroit, and he is at present gauging the flow of the St. Lawrence river. He was married July 2, 1910, to Miss Alice Mabel Smith of Detroit.—Norman Gerhard writes that they are rushing the aqueduct at Cold Spring, as New York City needs water, and that he often sees Wise and Breitzke.—Arthur E. Russell has left the Bath Iron Works, and is now with the machinery division of the U. S. Navy Yard at Boston.—V. H. Paquet is still with the Bath Iron Works, and has been working on the interesting problem of balancing the four cylinder, triple expansion engines of the steamer *Moosehead*, without the use of counterbalance weights.—W. P. Bixby recently resigned his position with the Erie railroad and is now engaged in shop management work with the Union Wadding Company, Pawtucket, R. I.—Bob Gardner is engineer with the T. A. Scott Wrecking Company, Boston, and has interesting tales of handling wrecks along the Atlantic coast.—Carl Danforth writes that very fortunately he escaped without any loss or damage in the big fire in Bangor on April 30, though most people there suffered heavy damage. Inside of five years they expect to be built up again, bigger and better than ever.—Philip Castleman has just received an M. D. degree from George Washington University, and is a candidate for the degree of M. S. in October. —George Fuller writes:

> Am graduating this year in Course I with the class of 1911, six years late, but will always be an '05 man, for that certainly is the best class ever. Expect to work for the N. Y. State Highway Commission.

—F. O. Sprague is starting a laboratory in the sole leather plant of the Cattaraugus Tanning Co., Olean, N. Y. The secretary has interesting letters from Ros Davis, Harry Wentworth, and several others, but is saving them for the next news number, as they will be just as interesting then, and unless you fellows do better than you have done previous summers, he will be short of news in September. Please help him avoid such an unfortunate state of affairs.

E. G. Schmeisser, from the electrical engineering course and formerly assistant engineer in the department of electric traction

of the Pennsylvania Railroad Company, has been elected second vice-president of the Wiener Machinery Company of New York.

1906.

RALPH R. PATCH, *Sec.*, 15 Lincoln Street, Stoneham, Mass.

Early in June a letter was sent to members of Courses I & XI asking for statistical information and an autobiographical report. Of those replying 75 per cent. are following the line of work for which they prepared. Not one man but what would go back to Tech if he were to prepare for life's work again. Just one half are married and between the thirteen married ones there are ten children. Only eight are sure that their boys will go to Tech. Twelve get as much remuneration as they hoped they would, four do not, and ten didn't think. If any '06 man reading these notes thinks it worth while to follow this method of news gathering through all the courses just take the trouble to say so and if you have any suggestions to offer on future letters as to information you want included let us know and we will include it.—We have received a copy of a paper entitled "A Scientifically Designed Street Lighting Unit" by Herbert S. Whiting, presented at a meeting of the New York Section of the Ill. Eng. Society. Herb is an authority on this question.—Allen Ashley is selling for the New York office of the Westinghouse Elec. and Mfg. Co.—With pleasure we note the arrival of Margaret Cole Taylor to Mr. and Mrs. DeWitt McClure Taylor, Pittsburg, Pa., April 4, 1911.—Also the marriage of Harry Hall Cook to Miss Ethel Gertrude Hubbard at Norwood, Mass.—On the 9th of April the New York bunch got together at the Technology Club. Only four men appeared, Whiting, Thompson, Littig and Hinckley. The dinner as usual melted into the time-honored game of pool.—Robert S. Clark called in to see the secretary. He is with the Reading Iron Co., Somerset Coal Dept., Kimmelton, Pa., as master mechanic and electrician. He says "working like a son-of-a-gun on an average of twelve hours a day and have my troubles but manage to keep a smile on part of the time."—H. P. Barnes says that he does not believe in writing autobiographies although he will probably be interested in those appended here.—Terrell Bartlett was engineering assistant on the Pittsburg division of the Pennsylvania lines west of Pittsburg in 1906 and 1907. The next year he was recorder and chief inspector of the Detroit River Tunnel Company, and in '08 was engineer for the chief inspector of the United States army, department of Texas. He then entered independent practice at San Antonio and in '09 became a member of the firm of Bartlett & Ranney (Willis Ranney, '07), civil and structural engineers, at San Antonio. The firm is engaged in a number of important undertakings, but by far the most important is the engineering work on the great Medina six million dollar irrigation project

financed by Dr. Fred S. Pearson, which is to irrigate the valley of the Medina river.—F. A. Benham entered the engineering department of the New England Telegraph and Telephone Company, in Boston, in 1906 where he is still engaged in general engineering work.—L. G. Blodgett has spent most of his time since '06 in Louisiana and in Mississippi, constructing steel and concrete railroad bridges. He is now located in Kansas City with the A. M. Blodgett Construction Company.—George W. Burpee went with the Louisville and Nashville Railroad Company in 1906, and the next year entered the employment of Westinghouse, Church, Kerr & Co., New York City, where he is now located.—C. E. Carter was with the Oregon Through Line two and one-half years. Since then he has been engaged in irrigation work. He is with the Twin Falls North Side Land and Water Company, Jerome, Idaho.—E. S. Chase is chemist in charge of the sewage purification works, Reading, Pa.—Arthur M. Chidester says that he has been hunting and working for health and having found that got married. He is at 446 South Printer Avenue, Whittier, Cal.—George L. Davenport was connected with the engineering department of the Pennsylvania Railroad for a year and has since been in the employ of the Atchinson, Topeka and Santa Fé Railroad in a similar capacity. He is located at 1235 West 49th Street, Los Angeles, California.—Sidney L. Davis is with the Corn Exchange Bank, Broadway, and 28th Street, New York City.—Norman P. Gerhard is with the New York Board of Water Supply, first as assistant engineer in the reservoir department and more recently in the New York aqueduct department.—Samuel A. Greeley was with Hering & Fuller, hydraulic and sanitary engineers of New York City, for four years, designing and constructing sewage disposal works, water filters, etc. In 1909 he became resident engineer on the construction of the Milwaukee refuse incinerator and is now superintendent in charge.—George R. Guernsey was an assistant in the department of Civil Engineering at the Institute for a time and then became connected with the reclamation service in charge of a surveying party on preliminary work and location of canals and distributing systems. He is now with N. W. Harris & Co., incorporated, Boston.—Herbert W. Harvey was draftsman for the Board of Water Supply, New York City, and then became connected with the O'Rourke Engineering Construction Company of New York as engineer on the North river tunnels. In 1909 he became designer in the Passaic Valley Sewerage Company of Newark, N. J.—George F. Hobson did engineering work on the East river tunnels, New York, and the next year was engineer in charge of earth and dam irrigation system, Rocky Mountain Cattle Company, Wyoming. He then became assistant in the engineer's office in the city of Lowell, Mass., and in 1909 was superintendent of construction for the Boston Water Department. He is now computer in the super-

vising architect's office, Washington, D. C.—Charles T. Leeds entered the United States army as lieutenant and is now captain of engineers. He was placed in independent charge of an engineering district while the rest of his class at West Point were still assistants. He is in charge of the defensive works at San Diego, Cal., and of the dredging improvements of the harbor of San Diego and Los Angeles, Cal. He is also in charge of the distribution of breakwaters at San Pedro and St. Luis Obispo, Cal. He is a member of the harbor line boards of San Diego and Los Angeles, also of the California débris commission which regulates hydraulic mining in California.—Clifford Lynde became connected with the Pennsylvania Railroad in the Maintenance of Way Department, and the next year was assistant engineer with the Board of Water Supply, New York City. He is still connected with the Board of Water Supply and has been connected with the designing division and the Esopus division on inspection. He is now at Walden, N. Y., as assistant to the engineer of the Newburg division.—Henry M. McCue has been rodman and transitman for the Metropolitan Park Commission of Boston; transitman for the Boston and Northern Street Railway; assistant engineer for the Charles River Basin Commission, and assistant engineer for the Massachusetts Highway Commission.—R. R. Patch is now serving his third year as commissioner of public works in the town of Stoneham, Mass. He entered the service of the Massachusetts State Board of Health in 1906 and after remaining there for a short time became assistant superintendent of the E. L. Patch Company, manufacturing pharmacists and chemists, Stoneham, Mass. He is trustee of the Stoneham Five Cent Savings Company and a trustee of the Stoneham high school alumni loan fund.—Mark H. Place has followed the railroad engineering most of the time since leaving Technology. His work has been largely in Montana and California as well as in Minneapolis and Milwaukee. He is now employed by the Illinois Tunnel Company of Chicago, who are installing the automatic telephone system there.—E. B. Pollister planned and constructed the city water works and electric light plant of Robinson, Ill., and is now manager of them. He says that he has a fine plant using a Diesel oil engine for power. The switchboard cost is .007 per kilowatt hour which is less than the cost in the city of Boston.—E. M. Read has been in the contracting business ever since leaving the Institute, and is now connected with the Canadian Pacific Railroad in the Rocky Mountains.—Arthur L. Sherman has been connected with the New York Board of Water Supply for five years. At present he is working on the Catskill aqueduct.—Dana M. Wood worked through several grades up to the position of assistant engineer in the United States geological survey, water resources branch. Last year he became connected with Stone & Webster of Boston.

Shields Burr's engagement was announced in June, to Miss Edna Hassett of Waltham.—J. H. Polhemus has recently made a trip around the circle to find out what other people are doing in the mining and milling lines. Polhemus is manager of mines for the American Zinc Lead and Smelting Company, who have extensive interests in various parts of the United States and who made the biggest mining deal in the history of the Joplin district, a few months ago, when they took over about 640 acres north of Webb City, in the heart of the richest sheet ground in the district, and which is covered with mills.

1907.

BRYANT NICHOLS, *Sec.*, 143 Garland Street, Everett, Mass.

HAROLD S. WONSON, *Res. Sec.*, 149 East Main Street, Gloucester, Mass.

I. *On the Part of the Secretaries*

Another year has passed, and it is now four years since '07 joined the ranks of the alumni; 4 plus 1 is 5. Next year is our fifth anniversary! Prepare for it now. Plan to be in Boston. Think of the way you would like to celebrate, and then put your thoughts on paper and send them to the secretary. Something is going to happen next June in the '07 camp. What shall it be? We welcome suggestions.—It is hardly necessary for the secretary to make any formal report for the year. You who have followed the REVIEW notes, and have received letters, notices and ballots, have a pretty good idea of what the secretary has done. You will find further evidence of his work in the following pages. He asks you to assist by simply writing him news and sending in changes of addresses. Very easy and yet only about one half of the class do it. If you are in the other half, follow the impulse of this moment and write. Harold S. Wonson is the new assistant to the secretary, Bigelow having resigned, and we shall try to be even more active in our correspondence.—The following men have been elected (by sixty ballots out of 300 sent out) class officers for 1911–1912: President, Alexander Macomber; vice-presidents, Donald G. Robbins Oscar H. Starkweather; secretary-treasurer, Bryant Nichols; resident secretary, Harold S. Wonson; auditors, Lawrence Allen, Arthur K. Tylee; member executive committee, Emerson H. Packard; nominating committee, John H. McMillan, Edward F. Kelly, Harold P. Farrington.

REPORT OF TREASURER FOR 1910–1911

Receipts

On hand July 1, 1910	$42.25	
Class dues and exchange	165.26	
Class dinner, Dec. 10, 1910	24.00	
Class dinner, Feb. 11, 1910	12.00	
Class dinner, April 8, 1911	42.00	
Interest	.78	
		$286.29

Expenditures

Class dinner, Dec. 10, 1910	$23.75	
Class dinner, Feb. 11, 1911	15.50	
Class dinner, April 8, 1911	42.15	
Printing	23.30	
Postage	10.82	
Alumni Association for clerical work	19.69	
Total	$135.21	
Balance on hand July 1, 1911	151.08	
		$286.29

It may be of interest to make a few comparisons between this report and last year's report. First of all, note that we have cash on hand now amounting to $151.08 against $42.25 last July. Second, note that $165.26 has been received for class dues this year against $63.00 last year. Then note that the total expenditures for this year are $135.21, while last year they were $159.28. Also, that of this year's total expense, $81.40 of it was for class dinners, and that for these same dinners $78.00 was received. These figures show that our treasury is in a very healthy condition.

II. *What '07 did at the Congress of Technology*

'07 began the festivities connected with the Congress by holding one of the best dinners we have ever had since graduation. The dinner was held at the Technology Club, Boston, and there would have been ample room in the dining room if only those men had come who had signified their intention of so doing beforehand. As it turned out, many other fellows showed up in addition. In fact they kept coming in bunches, so that Macomber and the secretary became quite worried for fear the accommodations would be insufficient. Everyone was so glad to be with the old bunch again, however, that he did not mind having to sit eight at a table meant for four, nor having to sit nearly out in the hallway. Forty-three men partook of the good things provided, including several fellows who had not appeared at a previous dinner since June, 1907. We were especially glad to have with us Albert E. Greene of Chicago who read a paper at the Congress and "Stud" Leavell, who came all the way from Cobalt for the occasion, and with the good Bursar, our honorary member, livened

things up in good shape. The following men were present: Charlie Allen, Lawrie Allen, F. W. Amadon, P. J. Colvin, Ralph Crosby, Jim Garratt, Albert Greene, Arthur Jealous, Alexander Macomber, J. T. Mahar, W. H. Martin, "Tucky" Noyes, P. R. Nichols, George Norton, W. S. Moore, Winsor Soule, W. B. Coffin, Robert Rand, W. A. Rich, Jr., "Kelly" Richards, Don Robbins, Oscar Starkweather, Phelps Swett, P. B. Walker, Harold Wonson, Ralph Hudson, "Stud" Leavell, H. L. Fletcher, Al Pope, E. H. Wing, Gilbert Small, E. V. Potter, Raymond Parlin, Harry Crohurst, H. R. Hall, H. R. Draper, H. W. Mahr, Walter Bigelow, "Becky" Sharp, Arthur Tylee, Bursar Rand, and Bryant Nichols. After the dinner we marched up Huntington Avenue to Symphony Hall enthusiastically bearing aloft the banners of the class of 1868 and of the Technology Club of Minneapolis, of which Wonson had the custody. In addition to the fellows named above, the following joined us at the smoker: "Tom" Gould, Bill Woodward, J. P. Hinckley, O. L. Peabody, George Otis, H. S. Wilkins, Sidney Wells, R. K. Taylor, S. E. Rockwell, and M. E. MacGregor. We certainly had a jolly time in the '07 camp on the floor of Symphony Hall that night. At the banquet on the following night ten of the boys showed up: Macomber, Lawrie Allen, "Stud" Leavell, Harold Wonson, Oscar Starkweather, George Norton, Winslow Robinson, H. W. Mahr, "Tucky" Noyes, and Bryant Nichols.

III. *Married Men and Class Babies*

In the July number last year a list similar to that below was published, and as it caused so much favorable comment, and as there have been so many additions to the list during the past year, it seemed appropriate to print the names as follows:

Name	*Married*	*Children*	*Born*
Allen, C. E.	Sept. 10, 1910		
Allen, Lawrence	Jan. 18, 1908	Lawrence Allen, Jr.	Aug. 28, 1909
		Richard Merritt Allen	March 4, 1911
Allen, L. L.	Oct. 28, 1908		
Ashenden, R. C.	June, 1908	R. C. Ashenden, Jr.	Sept. 6, 1909
Baker, C. E., Jr.	May 6, 1910		
Black, A. S.	Dec. 2, 1908	Alice Baker Black	Oct. 3, 1909
Boles, E. D.	March 21, 1908		
Bowen, C. A.	Oct. 15, 1909		
Bragdon, C. R.	June 16, 1909	Florence Elizabeth Bragdon	March 14, 1910
Bryant, G. H.	Date not known		
Burhans, H. N.	Nov. 24, 1908		
Chaffee, E. L.	June 23, 1909	(Wife died June 7, 1910)	
Chase, H. R.	Sept. 1, 1908	Barbara Chase	May 30, 1909
Christensen, A. O.	Jan. 25, 1911		
Coffin, W. B.	May 6, 1909	William Balch Coffin, Jr.	May 20, 1910
Crosby, R. H.	June 16, 1909	Evelyn Fanny Crosby	May 8, 1910
Darling, Miss Maude F.	March 19, 1910		
Davenport, L. D.	Sept. 6, 1909		
Davis, J. A.	Oct. 29, 1908		
Dean, C. S.	June 30, 1908		
Duncan, H. S.	July 1, 1908	Bernice Louise Duncan	May 12, 1909
Dyer, K. W.	Aug. 8, 1907	Osborne Coe Dyer	Aug. 23, 1908
		(Son died July 22, 1910)	
Emilio, S. G.	Date not known	Grace S. Emilio	July 11, 1909
Gaylord, J. M.	July, 1908	James M. Gaylord, Jr.	July 13, 1909

Name	*Married*	*Children*	*Born*
Gonder, W. B.	Feb. 28, 1910		
Gould, G. S.	Sept. 14, 1910		
Greene, Albert E.	June 10, 1911		
Griffin, G. A.	June 18, 1908	Charlotte Sanford Griffin	Jan. 7, 1910
Gupta, B. C.	Dec. 4, 1909	Comela Gupta (girl)	Oct. 11, 1910
Hallett, L. F.	June 14, 1909	Lucius F. Hallett, Jr.	April 16, 1910
Hampton, L. C.	April 21, 1909		
Hanford, J. W. G.	Date not known		
Hastings, H. B.	Dec. 18, 1907	Hudson Bridge Hastings, Jr.	April 14, 1910
Hosmer, H. B.	April 20, 1911		
Hudson, R. G.	Feb. 3, 1908	Gerald Carden Hudson	Sept. 16, 1909
Hutchins, C. M.	Feb. 12, 1906		
Jaccard, F. C.	Oct. 18, 1909		
James, E. W.	March 4, 1907	Alice James	Dec. 31, 1907
Jones, G. R.	Nov. 24, 1910		
Keeler, W. I.	Feb. 23, 1909		
Kingsbury, H. A.	Aug. 1, 1908		
Knight, R. F.	Oct. 7, 1908		
Kolatschevsky, A. T.	Nov. 18, 1908	Nicholas A. Kolatschevsky	Feb. 6, 1910
Labbé, A. G.	Nov. 30, 1910		
Lamont, C. R.	June, 1905	Constance	Sept. 1906
		John	May, 1908
		Benjamin	Sept., 1909
Leavell, J. H.	June 12, 1907		
Lee, E. G.	Oct. 7, 1908	Dorothy Guild Lee	Dec. 15, 1909
Loring, H. D.	Nov. 19, 1907		
Luther, G. D.	Sept. 20, 1910		
MacGregor, M. E.	Dec. 17, 1909		
Mansfield, A. P.	Jan., 1911		
McChesney, H. H.	Oct. 12, 1909		
Milne, W. D.	Oct. 1, 1910		
Moller, Kenneth,	June 19, 1907	Elizabeth Sweetser Moller	Aug. 19, 1908
		Susan Anderson Moller	Jan. 12, 1910
Moody, H. L.	Nov. 4, 1907		
Murfey, G. A.	Aug. 10, 1909		
Nichols, Bryant,	Sept. 14, 1909	Bartlett Fogg Nichols	Jan. 27, 1911
Nichols, P. R.	June 20, 1907		
Packard, E. H.	June 27, 1908		
Packwood, Miss L. P. C.	Date not known		
Parlin, R. W.	March 19, 1910		
Pope, Allen	June 10, 1908	Thomas Allen Pope	April 10, 1909
Rockwell, S. E.	Jan. 25, 1911		
Russ, D. E.	June 30, 1909	Marion Walton Russ	March, 1910
Sanders, R. B.	Sept. 18, 1907		
Smith, T. L.	June 18, 1907		
Soule, Winsor	Oct. 19, 1907		
Squire, E. H.	Jan. 26, 1910		
Starkweather, O. H.	Sept. 18, 1907	Oscar Allen Starkweather	June 30, 1908
		Ruth Elizabeth Starkweather	Nov. 1, 1910
Sullwold, H. A.	Nov. 16, 1908	Gretchen Sullwold	Aug. 7, 1909
		John Sullwold	Feb. 14, 1911
Taylor, J. H.	Sept. 12, 1910		
Thacher, S. P.	Date not known		
Thayer, R. E.	Sept. 1, 1910		
Thomas, J. J.	Dec. 28, 1910		
Udale, S. M.	Date not known		
Van der Stucken, F. R.	June, 2, 1909		
Vose, C. A.	Jan. 8, 1908	Carol Vose	Jan. 1, 1909
Waldo, W. G.	June 27, 1911		
Walker, P. B.	Jan. 26, 1910		
Wiggin, A. E.	Sept. 18, 1909	Lyman Albert Wiggin	July 18, 1910
Willcomb, R. H.	May 4, 1911		
Wilson, E. C.	Dec. 31, 1908	Hildegarde Wilson	March 25, 1911
Wing, E. H.	Nov. 11, 1908		
Wires, E. S.	June 22, 1909	Barbara Mead Wires	April 2, 1910

A total of eighty three married men of our 300 on the mailing list, or 27.7%. There are thirty five sons and daughters of '07.

IV. *Pithy Personal Pointers*

Bob Albro is with the W. H. McElwain Company, Nashua, N. H. His engagement to Miss Jean A. Oliphant of Springfield, Mass., was

announced on April 1.—Lawrence Allen's address is now 133 Newtonville Avenue, Newton, Mass. He was promoted to be sales manager of one of the selling departments of the W. H. McElwain Company this spring.—The engagement is announced of F. W. Bachmann.—F. E. Banfield, Jr., 17 Woodward Street, Newton Highlands, Mass.—Jim Barker has left his position with the Canadian Pacific R. R., but the secretary does not know where he is now located. Mail should be addressed to him at 20 Oxford Street, Pittsfield, Mass.—Oric Bates, son of Professor Bates, who was connected with '07 in our freshman year, has recently returned from Egypt, where he has made interesting explorations. —Rutherford Bingham is in South America. Mail will reach him if addressed to him at St. Nicholas Club, New York City.— J. C. Bradley is in Kenosha, Wis.—The long study of E. L. Chaffee at Harvard has been rewarded in fitting style. He has won a $200 Bowdoin prize at Harvard for the research which he has been doing during the year.

The work was on the study of a new method of impact excitation of undamped electrical oscillations, which method has turned out to be by far the best method for use in wireless telephony.

He also received a doctor's degree in physics at Harvard, and has been given a $575 fellowship for research next year, including his appointment as an instructor in electrical engineering and physics. Hearty congratulations!—Ralph Crosby is living at 39 Chute Street, Reading, Mass.—J. A. Davis is now in the Bureau of Mines, Washington, D. C. In June he was making an investigation of methods of mine tunneling in Denver, Col.— "Tom" Gould, 102 Webster Street, Manchester, N. H.—Lieut. S. C. Godfrey, U. S. A., Washington Barracks, D. C.—E. Sykes Goodwin, 42 Westminster Street, Providence, R. I.—B. C. Gupta writes as follows:

I have charge of a 3000 K. W., 60,000-volt, three phase substation—two electrical filatures, consisting of three three-phase, 2300-volt transformers and 1500 basin electric heaters in one of the largest silk mills in the world; also of eighteen miles of high tension transmission and telephone lines. I have been allowed plenty of leeway to carry on experimental work, and have invented and constructed the following: (1) electrical method of killing silk cocoon, (2) electric raw silk press, (3) electric coil winding machine for heaters, (4) electric boiler, (5) electric silk rewinding machine, (6) a very cheap electric heater (cost only 65c.), (7) electric silk thread guiding mechanism, and one or two smaller things.

Gupta is in Srinagar, Kashmere, India.—R. N. Hall, 409 West Elm Street, Brockton, Mass.—Hud Hastings writes:

There were about eighty at the informal dinner of the Northwestern Association the same night as the big banquet in Boston, and '07 was the best represented class with eight men present.

Good for the Chicago '07 boys!—T. C. Keeling writes:

I haven't seen an '07 man since leaving Boston for Ponce, Porto Rico, in May, 1908. Last July I came over to Cuba and am now located in San Antonio de los Baños, where T. G. Webber, '07, and I are in charge of Lake Ariguanabo Company, which supplies water and electric lighting service to the city. He and I are the only two Americans in town, but we are only twenty-two miles out of Havana and get in occasionally to see the metropolis, which, by the way, is very decidedly worth seeing.

—E. F. Lewis finished his scholarship in architecture at the American Academy in Rome on February 1, 1911. Since then he has been traveling around France with headquarters in Paris. He expects to be back in America this summer. Address, 148 Holden Street, Providence, R. I.—A. P. Mansfield, Wakefield, Mass.—Howard Marvin, 72 Mall Street, Lynn, Mass.—W. S. Moore, 261 West Newton Street, Boston, Mass.—Fred W. Morrill wrote in March, 1911:

Still in Tien-tsin teaching bridges and bridge design. I like it better and better but am coming home in July to see if I have forgotten how to carry a suit-case and chase my own tennis balls. Took a thirty-days' trip on horseback to Mongolia and Northern Shansi last summer. We had an interpreter who didn't speak any English. His function was to explain our Chinese to Mongols and also to Chinese.

—E. H. Packard is now living at 52½ South Goodman Street, Rochester, N. Y.—R. W. Parlin has charge of the engineering for the Washington County Water Company, Hagerstown, Md. He and Mrs. Parlin (Miss Darling, '07) may be addressed here.—W. P. Rayner, 4518 Baltimore Avenue, Philadelphia, Pa.—H. D. Reed is working for the New England Telephone and Telegraph Company. He became engaged a few months ago to Miss Helen D. Church of St. John, N. B.—John Rehn is in Hidalgo, N. L., Mexico.—G. H. Rodd, 108 2d Street, Portland, Ore.—A. F. Stevenson is now manager and bacteriologist for the New York Dairy Demonstration Company. They have a creamery and ship absolutely clean, pure milk to New York, where it is sold by the committee on infant mortality of the New York Milk Committee to the poor people for infant feeding.—Phelps Swett is engaged to Miss Eleanor MacAdam of West Medford, Mass., and expects to be married in the fall.—C. J. Trauerman is now at Tuscarora, Nev.—W. G. Waldo is now at 581 Woodward Avenue, Detroit, Mich.—E. F. Whitney writes from Seattle, Wash. He is secretary of the Seattle section of the American Institute of Electrical Engineers. He says that O. W. Potter, '07, is working with the Milwaukee and Puget Sound R. R.—L. C. Whittemore, 236 Main Street, Poughkeepsie, N. Y.—H. S. Wilkins, Wallingford, Vt.—E. C. Wilson is running a general engineering office in Waterville, Me. He with Alvord and Lee represent '07 in the Maine Society of Civil Engineers.

1908.

JOHN T. TOBIN, *Sec.*, care F. F. Harrington, Bridge Engineer, Virginian Railway Company, Norfolk, Va.
RUDOLPH B. WEILER, *Res. Sec.*, care of Sharples Separator Company, West Chester, Pa.

I. *On the Part of the Resident Secretary*

As it was discovered at the last moment that the Technology Club could not be secured for the May 9 dinner, after all arrangements had been made, the dinner was held at the Boston City Club instead. The following were present: Lawrence H. Allen, A. B. Appleton, C. H. Boylston, W. E. Barton, R. J. Batchelder, F. A. Cole, A. M. Cook, C. W. Clark, R. W. Cushing, "Nick" Carter, L. B. Ellis, W. D. Ford, H. P. Gurney, Sherwood Hall, Jr., P. H. Heimer, A. W. Heath, "Doc" Leslie, O. S. Lyon, C. W. Morrison, E. J. Scott, E. R. Smith, C. W. Whitmore, and "Pop" Gerrish, who presided,—twenty-three in all. It was decided that all future bi-monthly dinners be held at the Boston City Club, at one dollar per plate, instead of at the Technology Club as heretofore. Please note! It was decided to omit the regular July dinner and instead to make a trip to Nantasket. H. T. Gerrish, 247 Atlantic Avenue, Boston, and Leslie Ellis, care Metropolitan Water Works, 1 Ashburton Place, Boston, were elected a committee to make the necessary arrangements. On recommendation of the resident secretary, the following motion was passed: "That the resident secretary be instructed to refund to the class representative on the Alumni Council any necessary expense said representative incurs for dinners at meetings of the council, after this date (May 9, 1911) for a period of ten years from date." Up to this time, in order to represent us at the Council meetings, it has been necessary for our representative to personally defray the expense of the dinner which always accompanies the meeting. Hereafter the class will justly bear the burden.—The sum of twenty dollars was voted as a contribution toward the support of the crew. The term of office of our representative on the Council will expire this year. An election will take place at the September meeting to fill this vacancy.—Owing to a mistake on the part of the printer, the death of Warren Stearns Baker, '08, was chronicled under 1907 news in the last issue, instead of in our own column.—Leo Loeb has an article on the "Purchase of Coal by Specification" in the March number of the *Engineering Magazine*. This was first presented as a paper before the Society of Engineers of Eastern New York in November, 1910. Another article of his dealing with the refinements of methods of making analyses for payment on the B. T. U. basis, appeared in a recent number of the *Journal of Industrial and Engineering Chemistry*.—That the New York

contingent is getting up to speed under the able direction of Harold S. Osborne (care American Tel. & Tel. Co., 15 Dey St., New York), is shown by the following letter which we received from him under date of March 27. No doubt some of the fellows visiting New York can arrange their trips to take in these dinners. They can be sure of an enthusiastic welcome by the "regulars."

After a little discussion down at the club, we finally resolved to have a 1908 class dinner here in New York. The great event was entitled in the notices "The First Reunion Dinner of the Class of 1908 in New York," and took place Saturday evening, March 25, 1911. We sent out notices to about thirty-five '08 men in and near the city, and managed to collect a pretty fair representation: E. J. Riley, W. H. Mason, A. B. Babcock, R. S. Crane, H. D. Bonnetheau, W. H. Toppan, A. F. Edge, C. H. Preston, A. E. Bremer, W. H. Medlicott, H. L. Burgess, O. A. Iasigi, F. J. Friedman, H. S. Osborne—fourteen in all. Strangely enough, Bremer was the only man in the crowd who was married, or who would admit it, so of course, he was enthusiastically toasted. None of the other fellows would even confess that they are engaged. I suppose that we are to conclude that the twenty-one fellows who didn't come to the dinner are all either engaged or married, and that that is why they didn't appear.

You may be sure that we had a jolly time, for Iasigi acted as Lord High Mixer of Cocktails, and Bonnetheau filled the place of Master of Informalities. After a good dinner had loosened everyone's tongue, we sat the evening out around the table, telling all we could about the actions of the other fellows, and all we cared to about our own behavior during the last two years and a half. One feature of the evening was a very interesting discourse by Bonnetheau on "Architects and Architecture I Have Known," another was the story told by Toppan and Babcock of their experiences in Philadelphia. All in all it was so enjoyable an evening that we agreed to take dinner together informally at the club the last Saturday of every month. We shall be glad if you will have a note of that published in the REVIEW, so that all the 1908 men around New York may know of it.

II. *Matrimonial*

The engagement is announced of Harold H. Howland to Miss Etta E. Mason of Lowell, Mass.—Rudolph B. Weiler was married June 6, 1911, to Miss Emily A. Gilchrist of Brighton, Mass.

Here follows a table as complete as we were able to make it from our records of all the fellows married to date, with children, if any. We realize that it is probably very incomplete, and would be glad to receive corrections as well as additions. Your resident secretary has even added his own name to the list. No account has been taken of the fellows who reported "married to my job." Judging by the number who reported "not yet but soon" the list will be due for some increase, in some cases, in all four columns.

The marriage announcement of Arthur E. Skillings to Miss Eva B. Pillow of Allston, Mass., on April 12, has been received. —George M. Belcher's engagement was announced April 17, through the *Boston Transcript*, to Miss Edith W. Bryant of Cliftondale, Mass. Miss Bryant is a graduate of Wellesley College.

Name	*Married*	*Children*	*Born*
Adams, W. A.	Date unknown		
Allen, Horace E.	June 1, 1910		
Ambrose, Chas. B.	June 18, 1910		
Amory, Robt.	Sept. 20, 1910		
Angus, R. A.	Nov., 1909		
Anthony, R. B.	Oct. 12, 1910		
Bailey, G. Wm.	July 1, 1908	Sherburne Byron Bailey	Dec. 2, 1909
Barton, W. E.	Nov., 1909	Daughter	Sept., 1910
Batsford, Howard E.	Aug. 10, 1910		
Bonillas, Ignacio	Dec. 18, 1909		
Bremer, Arthur Edmund	Oct. 16, 1909		
Brown, Philip C.	June 1, 1909	Mary Phyllis Brown	July 20, 1910
Bullard, Benjamin	March 31, 1910		
Bullard, M. L.	March 24, 1910		
Callaway, H. Ross	Oct. 3, 1910		
Caryl, R. C.	Sept. 26, 1910		
Christensen, Arthur O.	Jan. 25, 1911		
Clapp, Chalmers S.	May, 1910		
Cochrane, Clifford H.	Nov., 1909	Richard Maurice Cochrane	Sept. 27, 1910
Daddow, S. H.	Feb. 3, 1909*		
Dana, Allston,	June 11, 1908	Dorothy Dana	Nov. 8, 1909
Davidson, S. Lock	June 9, 1909		
Dolke, Jr., W. Fred	Nov. 21, 1910		
Drake, R. E.	March 20, 1911		
Dwight, Jr., J. F.	April 26, 1909		
Eames, Herbert S.	July 22, 1910		
Elton, H. C.	Sept. 5, 1909**		
Ferris, Raymond W.	Jan., 1909	Son	Date unknown
Ferry, Lewis K.	Nov. 24, 1908***		
Freethy, Geo. E.	Date unknown		
Gardner, Arthur L.	Oct. 27, 1909	Laurence Ripley Gardner	Dec. 3, 1910
Glover, Geo. T.	April 6, 1910		
Hall, Carl A.	Sept. 13, 1910		
Hall, Edwin R.	July 6, 1910		
Handy, Percy L.	Dec. 26, 1910		
Hastings, Arthur H.	June 23, 1906	Ben Gaston Hastings	Sept. 8, 1907
		Harriett Hastings	Oct. 12, 1909
Hedge, Lafayette B.	Jan. 18, 1909	Lafayette Boyd Hedge, Jr.	Dec. 15, 1910
Hoole, Henry Wm.	Feb. 20, 1906	Henry Wm. Hoole, Jr.	Dec. 20, 1906
		Robt. Royal Hoole	May 5, 1911
Kedy, Stiles F.	Oct. 20, 1909		
Kenniston, C. W.	April 8, 1910		
Kinsman, C. C.	Feb. 27, 1900	George C. Kinsman	Feb. 7, 1902
Packwood, Miss L. P. C.	Date unknown		
Parlin, R. W.	March 19, 1910		
Penny, Alec N.	May 21, 1910	Dorothy Buths Penny	March 17, 1911
Pierce, Geo. H.	Dec. 25, 1908	Stanley Holt Pierce	Nov. 25, 1910
Porosky, Matthew	Jan. 10, 1911		
Reid, J. G.	Dec. 27, 1910		
Remon, J. A.	Sept. 1910		
Ripley, Read I.	Oct. 4, 1910		
Sampson, Miles	Nov. 9, 1910		
Sando, J. B.	Date unknown		
Schirmer, Rens E.	July 27, 1909	Edward Parker Schirmer	July 4, 1910
Scott, Edward J.	Dec. 4, 1909		
Smith, E. R.	June 13, 1909		
Sutton, L. H.	Aug. 20, 1910		
Talbot, Jas. M.	Oct. 28, 1909	John DeGroff Talbot	Jan. 1, 1911
Thompson, Abbot H.	Oct. 26, 1910		
Thurlow, L. W.	Date unknown		
True, H. E.	Nov. 15, 1910		
Warren, Edward Leon	April 26, 1910		
Weeks, Arthur T.	Jan. 3, 1910		
Whitmore, C. W.	Sept. 28, 1910		
Weiler, Rudolph B.	June 6, 1911		
Youngerman, Conrad	June 15, 1910		

*Mrs. S. H. Daddow died Jan. 1, 1910.
**Mrs. H. C. Elton died May, 1910.
***Mrs. Lewis K. Ferry died June, 1910

III. *Report of the Condition of the Treasury*

The treasurer's report for the year ending June 1 follows. A comparison with that of last year shows a larger balance, and

also much larger expenditures. The latter is due, first, to the fact that by vote of the annual meeting of 1910, printed return card notices of all bi-monthly meetings were sent out to residents of Boston and vicinity, and secondly, to the fact that this year the resident secretary had the class register carefully compared with that in the alumni office to correct any errors that may have crept into either. The receipts for dues this year were $10.75 less than last year. This means that you have probably neglected to settle up for this year. Right? We thought so. Then mail it in at once. The loss on the annual dinner was caused by the failure of several who had promised to come, to show up. Twenty-six favorable replies were received, so we felt safe in guaranteeing twenty-three. Only twenty appeared. Moral: If you say you are coming, and later find that you can't, let us know about it.

TREASURER'S REPORT, YEAR ENDING JUNE 1, 1911

Receipts

Balance on hand June 1,1910	$136.52	
Dues received	147.55	
Received for 20 dinners at $1.50, March 14	30.00	
		$314.07

Expenses

Paid to Alumni Association for printing, typewriting, postage, office expense, etc.	$61.77	
Postage (Additional)	6.19	
Typewriting (Additional)	1.49	
Printing annual letter	11.80	
Flowers, per vote of annual meeting	3.00	
Paid for 23 dinners at $1.50, March 14	34.50	
Collection charges by bank	1.70	
Miscellaneous	1.09	
Balance	192.53	
		$314.07

IV. *Results of Salary Canvass*

The total number of replies received on the salary canvass was 146. Of these 106 were on the graduate list and forty on the non-graduate. Two of the former were not counted, as one bore the word "Independent" and the other stated "In business for myself with varying income." Three of the non-graduate cards were omitted. One was endorsed "*Quantum Sufficit*," another stated "Still a student at the Institute" and the last "No salary at present owing to peculiar conditions." The net result, then, is 104 graduate cards and thirty-seven non-graduate, which is an increase of twenty over last year. The average salary of the 104 graduate members was $1,418.38 and total amount earned by them was $147,512. The average salary of the thirty-seven non-graduate members was $1,664.81 and the total amount

earned by them was $61,598. The total amount earned by all members reported was $209,110 making an average of $1,483.05. The gains over last year on the averages are $266 for the graduates, $254 for the non-graduates and $270 for both together. The lowest reported by a graduate was $540 and expenses, and the lowest by a non-graduate, omitting the one who reported none at all, was $720. In this tabulation no expenses were figured, nor Christmas presents, nor interest in the business. The highest salary reported by a graduate was $4,000 and by a non-graduate $4,680. The latter was by a man in business for himself and is stated to be the amount cleared in one year. The middle man on the graduate list received $1,300 and in the non-graduate list $1,500. The graduate list is made up of all men who ever were connected with the class of 1908 who hold a degree from the Institute, whether given in '08 or not, and whose names have not been removed. On the graduate list fifty-six men received less than the average and forty-eight men more. On the non-graduate list twenty-two men received less than the average and fifteen men more. For the two lists taken together eighty received less than the average and sixty-one more.

ANALYSIS OF SALARIES, CLASS OF 1908

	Graduate	*Non-graduate*	*Total*
Below $750	3	1	4
$750 to $899	4	1	5
900 to 999	8	2	10
1,000 to 1,099	12	7	19
1,100 to 1,199	0	1	1
1,200 to 1,299	18	2	20
1,300 to 1,399	9	2	11
1,400 to 1,499	4	2	6
1,500 to 1,599	19	4	23
1,600 to 1,799	4	3	7
1,800 to 1,999	9	5	14
2,000 to 2,199	7	0	7
2,200 to 2,399	1	2	3
2,400 and over	6	5	11
Total	104	37	141

IV. *New Addresses*

Monroe Ames, 926 Calle Echeverria, Belgrano, Buenos Aires, Argentina.—Robert Amory, 31 Massachusetts Avenue, Boston, Mass.—R. B. Anthony, The Bristol Company, 1670 Frick Building Annex, Pittsburg, Pa.—A. B. Babcock, American Sugar Refining Company, Brooklyn, N. Y.—G. William Bailey, Dan O'Connell & Sons, contractors, Holyoke, Mass.—Charles L. Batchelder, Transitman, City Engineer's Office, Lowell, Mass.—R. E. Beck, 127 Cornell Street, Newton Lower Falls, Mass.—E. J. Beede, 139 Lincoln Street, Boston, Mass.—F. M. Bond, Forest Products

Laboratory, Madison, Wis.—Donald Bowman, Engineering Department, Commonwealth Edison Company, 28 North Market Street, Chicago, Ill.—A. E. Bremer, 921 Washington Street, Hoboken, N. J.—A. O. Christensen, Sombrerete, Zac, Mexico.—Chalmers S. Clapp, Room 622, Berkeley Building, 420 Boylston Street, Boston, Mass.—George A. Clatur, City Engineer's Office, Pawtucket, R. I.—Frederick G. Coburn, U. S. Navy Yard, Philadelphia, Pa.—Frederick A. Cole, Moore & Co., 12 Pemberton Square, Boston, Mass.—LeSeur T. Collins, 53 State Street, Boston, Mass.—Hugh Correll, 322 East 25th Street, Tacoma, Wash.—John S. Coye, 295 Shasta Avenue, Oakland, Cal.—M. E. Denny, Leven Shipyard, Dunbarton, Scotland.—Arthur S. Douglass, 164 Harvard Avenue, Brookline, Mass.—Gregory M. Dexter, Engineering Department, Oregon Short Line R. R., Salt Lake City, Utah.—R. E. Drake, 24 Trinity Place, Boston, Mass.—Leslie B. Ellis, Metropolitan Water Works, Ashburton Place, Boston, Mass.—Charles G. Ewing, 822 Security Building, St. Louis, Mo.—Paul E. Fernald, P. O. Box 397, Tuscon, Ariz.—Hubert W. Flaherty, 101 Tremont Street, Boston, Mass.—W. D. Ford, Blake & Knowles Pump Co., East Cambridge, Mass.—V. M. Frey, G. E. Baker Company, York, Pa.—F. J. Friedman, 50 East 20th Street, New York, N. Y.—J. C. Gaylord, Instructor in Electrical Engineering, University of Southern California, Los Angeles, Cal.—Charles A. Gibbons, Jr., Jacala, Hgo., Mexico.—Gordon M. Gilkison, Telluride Power Co., Provo, Utah.,—William B. Given, Jr., Secretary to the President, American Brake Shoe and Foundry Company, 20 Clinton Street, New York, N. Y.—George T. Glover, Westinghouse Electric & Machine Co., New England Building, Cleveland, Ohio.—H. W. Griswold, U. S. Engineer Office, Tuscaloosa, Ala.—Harold P. Gurney, North American Rubber Company, Hyde Park, Mass.—Joseph W. L. Hale, Head Instructor, P. R. R. School for Apprentices, 1120 & 13th Ave., Altoona, Pa.—James E. Hale, Goodyear Tire & Rubber Company, Akron, Ohio.—M. LeRoy Hammond, 30 Walker Street, Newtonville, Mass.—A. W. Heath, Cameron Car Company, Beverly, Mass.—Ben Hershey, 1026 Henry Building, Seattle, Wash.—P. H. Heimer, 498 Norfolk Street, Mattapan, Mass.—C. E. Hollender, Purchasing Agent, Northern Texas Traction Company, Fort Worth, Tex.—Henry W. Hoole, Chicago Manager, Miller, Franklin & Stevenson, Business Economists, 435 First National Bank Building, Chicago, Ill.—H. H. Howland, Westdale, Mass.—W. W. Karnan, 1818 Wright Building, St. Louis, Mo.—Stiles F. Kedy Minetto-Meridan Company, Minetto, N. Y.—Richard Y. Kennard, 98 Main Street, Winsted, Conn.—W. C. Kerr, Catonsville, Md.—Warner H. Kiefaber, 20 Bellevue Avenue, Dayton, Ohio.—C. C. Kinsman, T. H. Symington Company, 623 Peoples Gas Building, Chicago, Ill.—B. S. Leslie has been trans-

ferred from the Chicago office of the United Shoe Machinery Company to their Boston offices in the Albany Building.—Howard B. Luther, Lukas Str., Dresden, Germany.—John H. Locke, Westinghouse Lamp Company, 514 West 23rd Street, New York, N. Y.—G. M. J. MacKay, Research Laboratory, General Electric Company, Schenectady, N. Y.—Leo Loeb, Renssalaer Polytechnic Institute, Troy, N. Y.—William H. Mason, care Marcus Mason & Company, 17 Battery Place, New York, N. Y.—Lincoln Mayo, 11 Robeson Street, Jamaica Plain, Mass.—C. W. Morrison, Associated Factory Mutual Fire Insurance Company, 31 Milk Street, Boston, Mass.—W. H. Medlicott, London Assurance Corporation, 84 William Street, New York, N. Y.—Everett H. Newhall, 238 Summer Street, Lynn, Mass.—Alec N. Penny, Ray Consolidated Copper Company, Ray, Ariz.—E. A. Plumer, American Telephone & Telegraph Company, 15 Dey Street, New York, N. Y.—Read I. Ripley, 348 Congress Street, Boston, Mass.—Miles Sampson, American Machine Company, Pawtucket, R. I.—Robert A. Schmucker, Red Hook, N. Y.—Edward J. Scott, 50 Congress Street, Boston. Mass.—H. R. Sewell, Allis-Chalmers Co., 801 Wilson Building, Dallas, Tex.—Allen Seymour, Provident Building, Tacoma, Wash.—Frank W. Sharman, care Olmstead Brothers, Brookline, Mass.—Carroll D. Steele, 1226 East 1st Street, Duluth, Minn.—Lloyd H. Sutton, Ass't Examiner of Patents, Patent Office, Washington, D. C.—L. W. Thurlow, Great Western Sugar Company, Fort Collins, Col.—Channing Turner, care Sears & Smith, 516 Howard Building, Providence, R. I.—E. A. Turner, care Northwestern Expanded Metal Co., Old Colony Building, Chicago, Ill.—Leland E. Wemple, Hoyt Metal Company, Granite City, Ill.—Mason T. Whiting, care Charles T. Main, 201 Devonshire Street, Boston, Mass.—Arthur C. Winch, Saxonville, Mass.—Lester S. Weeks, General Superintendent, Ponce Railway & Light Company, Ponce, Porto Rico.—George D. Whittle, office of the Chief Engineer of Construction, P. & N. T. Ry., Amarillo, Tex.—Edgar I. Williams, American Academy, 66 Via Nomentana, Rome, Italy.—Rufus W. G. Wint, care F. W. Wint Company, Ltd., Catasauqua, Lehigh County, Pa. A. C. Nichols has returned from the Philippines, and his address is now 130 Pearson Road, Brookline.—Richard Collins, care W. H. McElwain Co., Manchester, N. H.

Your resident secretary met J. A. Remon, whom he had not seen for four years, recently in Philadelphia. His business address is care American Telephone & Telegraph Co., 764 The Bourse, Philadelphia, Pa., and his home address is 1629 So. Ithan Street. A large number of fellows came to town for the Congress of Technology, and the class was well represented at both the smoker and the banquet.—At the Pops on June 6 the following were present: L. H. Allen, R. J. Batchelder, who had just returned from Italy, traveling on the M. I. T. Scholarship, E. J.

Beebe, C. W. Clark, G. S. Clatur, Langdon Coffin, F. A. Cole, Richard Collins, A. M. Cook, Hardy Cross, R. W. Cushing, L. B. Ellis, S. Ellis, "Hobe" Ferris, who was in town for a few days from Akron, O., W. D. Ford, A. W. Heath, Sherwood Hall, Jr., C. F. Joy, Jr., Rinker Kibbey, "Doc" Leslie, A. C. Nichols, who had just returned from the Philippines, E. J. Orchard, Joe Pope, C. B. Putnam and "Pop" Gerrish.

V. *Letters*

E. A. Turner, '08, sends us the following from Chicago on the letter head of the North Western Expanded Metal Co., Old Colony Building., under date of April 3. Here's a good chance for the Chicago bunch to get acquainted:

It is nearly four years since I left old Boston town, and, unfortunately, I have never been able to get back there to see the old place. But I intend to some day before it goes "dry" (he has plenty of time—Ed.) and I will try to make up for what I have missed. I have often wondered whether it is much fun being a resident secretary, trying to keep in touch with a lot of fellows who have scattered to the four corners of the globe, and, incidentally trying to collect that "measley plunk" for class dues. . . . Your letters have reached me wherever I have been,—and I have been some. Please note the above address and don't try to reach me through every job I've held in the last four years, because when that letter reaches me it has been forwarded so many times that I have to pay excess postage on account of the weight of the ink used in keeping it going. Well, I have finally quit railroading after getting as far as holding down a roundhouse foreman's job. Twelve hours night work every night in the week is no fun and is also dirty. I found my vocabulary of profane language steadily increasing, but when it came to salary, it increased but slowly, and not in ratio with the responsibilities. I am holding down a job as assistant superintendent with the above company now and have a much better place, prospects and salary.

I have only been here in Chicago about three months and it has begun to look like a permanent thing and so I would appreciate it very much if you would give me the names of any of my former classmates who are located here so I can look them up.

Matthew C. Hayes, P. O. Box 3, Niagara Falls, N. Y., writes us under date of March 25, 1911, as follows:

If you know of any Technology men, and especially any of the members of our class, who expect to visit the Falls either on their "honeymoon" or for the more sordid purpose of business, please let them know that I am here on the lookout for them. Aside from the pleasure it would give me to see them, I might be able to reciprocate by showing them a few of the sights, as I am at present the assistant to the engineer-in-charge of the Ontario Power Company. Our capacity is now 120,000 h. p. and some of our current is sent out at 110,000 volts.

Our faithful South American member, "Bunny" Ames, 926 Calle Echeverria, Belgrano, Buenos Aires, has sent us the following letter with some photographs, with descriptions of the work and country, which the resident secretary will be glad to lend to any of the fellows interested:

I had hoped to be home this summer but have now decided to wait till 1912, when I shall be home about May 1, if all goes well. Life in these foreign countries

is not so wildly exciting as some folks at home seem to think, not at any rate unless you have plenty of leisure. When one works six and a half days a week there is not much time left for seeking adventures. The railroad here is getting on slowly toward completion. We hoped to finish the river wall last month but a series of storms in the months of December, January and February destroyed a lot of the coffer dam and now we shall not finish till April. One of these storms was a corker. The waves came so high that they were breaking right over the wall, which is 4.47 meters above mean low water and my box car that I live in was on a new bank within a meter of the edge. It didn't look good enough for yours truly so I left my happy home and went down to the office to sleep. The car was still standing next morning although it had a dangerous list towards the river. About one hundred meters further along though there were whole stretches of the track tipped up with one rail directly over the other, due to the earth being washed out from underneath. Of course, there is a parapet to be built later on which will protect our definite track from anything of this sort.

We have the following from Lewis K. Ferry, Paseo 27, Vedado, Havana, Cuba, under date of March 25, 1911:

I have been in Havana since February 1 and am teaching in the Cathedral school in Vedado. We have forty boys in the department I am in. Nearly half of them are Americans or of some other nationality than Cuban, but all speak Spanish. What Spanish I studied at Tech did not help me much in understanding or speaking with the Cubans, although I could read the newspapers with little difficulty. All of my classes are in English, but inasmuch as some of my Cuban boys understand and speak little or no English, I simply had to learn their language. If the next two months bring as much improvement as the last two, I shall not be afraid to go anywhere in Cuba by the time school closes. I expect to stay here for another year at least, and think I shall be very sorry to leave for I am very much in love with the Cuban climate. I have seen a number of aeroplanes in the sky, those the past week flying directly over Vedado on their way around Morro Castle and within sight and hearing of the school here. The carnival through the past month has interested me much. From what I hear, it is much like "Mardi Gras" in New Orleans. Sunday afternoon and evening for four weeks are the gayest times, though Mondays and Tuesdays there is something going on. In Havana there is a very wide street with a beautiful park in the center of it extending from the water opposite Morro for something like half a mile or more. I think it puts Commonwealth Avenue in the shade. The carnival parade is round and round this park and a driveway for a mile along the breakwater. Hundreds of carriages and many autos take part. Some of the people are in masquerade costume. Everyone has confetti and "serpentinas,"—multi-colored paper ribbon, so that at the end of two or three hours the "Prado" is pretty well covered with gay streamers caught on trees, houses and carriages. Children go about the street dressed in costume and usually masked. They are up to all sorts of pranks but are very well behaved. Sometimes there are musicians in the crowd and then you soon realize you are not in America. Cement is king here all right. Houses are built of brick or stone, and covered with cement or plaster and painted. Walks are made of cement and it is hard to find a place where some has not been used. Havana is a very clean city and far more orderly than any place I have ever been in before. "Cops" naturally are in evidence everywhere, but I have not seen any of them have to do much yet. Politeness is a rather necessary virtue here, and many Americans could do well to follow the example set by these warm-blooded people. I presume you would appreciate a little breath of the sweet, warm, caressing Cuban climate, but I am afraid the frost will nip it before it reaches Boston.

1909.

CARL W. GRAM, *Sec.*, care Walter Baker Co., Ltd., Milton, Mass.
MAURICE R. SCHARFF, *Res. Sec.*, Mass. Inst. of Tech., Boston, Mass.

I.

As the secretary has returned to Boston, and appears likely to stay for awhile, the resident secretary feels that he has outlived his official usefulness, and retires herewith with a sigh of relief. It may be noted that the present notes are written by the secretary and resident secretary in collaboration. The class has had two reunions since the last news appeared, and both were voted successful. On April 10 a dinner was held at the Hotel Plaza in preparation for the Technology Congress smoker. Forty-six were present, and all succeeded in getting well prepared for the jollification that followed in Symphony Hall. Among those present were Ayres, Loomis, Haynes, Gram, Dawes, May, Clifford, Nisbet, Nickerson, Shaw, W. H. Jones, Main, Curley, Riefkohl, Fisher, Spencer, R. L. Jones, Rew, Hooper, Hamilton, Jacobs, Pope, Dow, W. W. King, Pepper, Godfrey, Boardman, Belcher, Scharff, Inglee, Martin, Emerson, F. G. Perry, L. D. Chapman, A. F. Jackson, Durgin, Jenness, Cole and Gibbs. Everybody took part in all the events of the Technology Congress, and had a wonderful time. On the night of the Pops a dinner was held to which ladies were invited. Those present with their ladies were: Nisbet, C. E. Foster, B. A. Robinson, Rew, E. A. Adams, Thornley, Scharff and Gram. Nisbet and Thornley deserve special mention, coming up from Providence with their fiancées; and "Smut" especially distinguished himself by also bringing one of our co-eds, Miss Pearson. Quite a bunch of '09 men showed up at the Pops, W. H. Jones, R. L. Jones, Martin, Dow, Gilbert, C. E. Foster, Thornley, E. Q. Adams, O. J. Crommett, Christie, Fellows, Haynes, Rew, Wells, A. F. Jackson, J. W. Parker, Gram, C. D. Jacobs, Pepper, R. W. Keeney, Nisbet, Dan Belcher, L. C. Shaw and Emerson. We were all glad to see Bob Keeney, who has been at the Colorado School of Mines. Here is an extract from a letter received from him before he came east:

> Next year I return here as instructor in metallurgy. I have recently been fortunate enough to be awarded the Carnegie Research Scholarship of $500 by the Iron and Steel Institute of Great Britain with which to continue the research begun in my thesis of last year on the "Production of Steels and Ferro-alloys directly from Ores in the Electric Furnace. The work is to be done here in a furnace designed recently by me before I received the award.

—Another of the fellows who deserves our congratulations is R. L. Jones, who has just received at the Institute the degree of doctor of engineering. Henceforth Dr. Reginald Lamont Jones.

The News, Tacoma, Wash., states that William F. Jones, consulting geologist, may be hired to conduct the survey of valuable coal lands in that vicinity, about which there is much vigorous protest in connection with taxing coal areas in their present undeveloped state. Jones has already made some valuable maps of the land lying between Fairfax and Wilkeson.—Wedding cards have been received from Grenville T. Bridgman who was married to Miss Anita Mailliard on June 3 at La Quinta, Belvedere, Cal. Mr. Bridgman has taken a position with American Zinc, Lead, and Smelting Company in Tennessee.—We quote the following paragraph from the *Washington Star*, about Miss Helen M. Longyear, who was married on March 25 to Assistant Civil Engineer Carroll Paul, U. S. N.

The charming bride was a brilliant student at the Massachusetts Institute of Technology, graduating number five in the class of 1909 and taking the highest honors in her specialty, architecture, being the editor of the *Architectural Magazine* After graduation, she entered the office of a leading New York architect and landscape gardener, working hard at her profession, and she also became interested in settlement work in the metropolis and spent last summer abroad, studying that question in Italy. But Dan Cupid has finally won her from architecture and the immigrants over to the naval service.

—We take the following from the *Engineering Record:* "Arthur B. Morrill has resigned from the engineering staff of the sewage experiment station of the sanitary district of Chicago, to accept the position of professor of hydraulic and sanitary engineering at the University of Tien-tsin, in China. Morrill is a graduate in sanitary engineering of the Massachusetts Institute of Technology." —J. N. Stevenson was in Boston the early part of June on his way from Terre Haute to Wolfeboro, N. H., where he and his wife will be in camp for the summer. Steve reports a very pleasant and successful year at Rose Polytechnic Institute where he has been teaching chemistry. Besides teaching he has been working hard to obtain the degree of master of science in chemical engineering which was awarded him this year. He reports that two of his classmates have been in Terre Haute during the year, and that when one does not see a Tech man, much less a class mate, for so long a time, he will be glad to go to the railroad station just to see a familiar face pass by in the car. If you are going to Terre Haute don't forget Steve.

II.

1909 Jr.

—Lewis H. Johnson writes:

Speaking of anniversaries, the first addition to the class of 1909 after graduation, by name Ralph Edward Johnson, celebrated his first birthday, April 5. He has seven teeth now and can be relied upon to do his best at the "eats." He sends greetings to the class of 1909.

—Harrut is also a father. On March 27, a son was born, who is to be called C. N., Jr.—H. O. Jenkins was married on May 8 to Miss Gem Lee Barker of Palo Alto, Cal.—The engagement has just been announced of Miss Helen E. Mooar of Hyde Park to W. W. Clifford.—Several fellows have come up with their annual class dues, and many of them are those who left during our undergraduate days. There is still a large percentage left, however, whom we know have the dollar, but who have forgotten that *we* need it. Please send us a check for 1911 and we won't refuse one at this time for 1912.—The class news for the REVIEW is supposed to go to press on the 10th of the month preceding its issue. The secretary mentions this, so that if you have any news, try to get it in by the 10th, so that it won't be ancient history when the class gets it. Get in the habit of dropping us a card occasionally with bits of news and a check regularly for the yearly dues.

III.

Herb Stiebel is now with the Sierra Plata Mining Company Villa Esobeda, via Parral, Chihuahua, Mexico, and writes:

Had a chance to come here at the end of last month (March) and flew the coop from Bingham. It took over seven days to go 2,467 miles, but it was new country for me and I enjoyed the trip, especially in Mexico. No news is good news *so au revoir.*

—In April Fred Green wrote from mobilization camp, Galveston, Texas:

Just received a copy of the REVIEW which has been chasing me around the country I am squatting down here on the border, hoping we'll invade Mexico, so I can get to see Altamirano, Munoz and other old friends from over the line. The weather here is hotter than Harry Clifford used to make it for the martyrs of Course VI. We "hike" about ten or fifteen miles a day. We are organized for service as infantry though of course that's only a side line to our work on the big guns. I went to Fort Monroe, Va., last fall and was there until spring, when we were ordered down here. When the excitement is over, it is probable that I'll go back to New Orleans with the 164th Company, Coast Artillery Corps, to which I'm now attached. My address is Lieut. Fred M. Green, C. A. C., in care of the Adjutant General, War Dept., Washington, D. C. To the charge of marriage I plead "not guilty."

—From George Weinhagen in Milwaukee comes the following item:

The latest news from Milwaukee is that Eugene Luening has started in business for himself, under the name "The General Welding and Manufacturing Co." They cut and weld all metals by the oxyhydric flame. This is a foreign invention, but has been greatly improved upon by them. They also manufacture the machine used in cutting and welding, and although they have been in existence for only about a month, have sold not less than six machines.

Lost. Any information as to the present whereabouts of the following will be welcomed by the secretary: Howard C. Congdon, C. H. Crawford.

Many reply cards of much interest were returned both at the time of the class dinner in April and again in June giving the following information: N. L. Coleman, 202 Union League Bldg., Los Angeles, Cal., says: "There are no 1909 men in this vicinity but there are quite a number of Tech men of many other classes. I am at present in the building material business (factory agent).—J. H. Schakne, 2304 Center Ave., Pittsburg Pa., is doing some original work in mill power engineering, the results of which will soon be published.—Lord Hersey, Bureau of Standards, Washington, D. C., says they are just installing a new 2,300,000 pounds emery testing machine. "I myself at present am working at the other end of the scale and trying to see into how many parts we can split a millionth of an inch."—R. W. Tuthill, Michigan City, Ind.: "I am now running a sand company, a garage and selling autos."—Austin Keables is with John A. Stevens, 14 Hoyt Ave., Lowell, in engineering, with a specialty in power plant work.—Ira Wolfner, Peoria, Ill., writes from Clarendon, Ark., that "it is too long a jump,—— but expect to be east in June."—Geo. C. Connor, 6001 Curtis Ave., Cleveland, O., is "busy with the lamp business, in Nat. Elec. Assoc. Had a bang-up dinner with 25 other Tech men here two weeks ago. Lots of Tech spirit (s)."—J. C. Dort, Box 972, Salt Lake City, Utah, says that "B. Y. Burgher has diphtheria and is in a Baltimore hospital." Hard luck, Burgher, here's hoping for a speedy recovery.—H. H. Marshall writes that he has word from R. Ohunki that he reached Japan six weeks ago.—Harold Shaffer is temporarily with the U. S. Reclamation Service at Sherman House, Boise, Idaho.—E. A. Robinson, 600 West 122, New York City, is looking for a good summer job. "I can analyze air, water and food, run automobiles and preach sermons."—F. L. Robeson, Blacksburg, Va., is instructing in mathematics at Virginia Polytechnical Institute. He says, "Prof. W. H. Rasche of Graphics here is an enthusiastic Tech man."—J. W. Hathaway says that "B. H. Jones, '09, E. A. Plumer, '08, and myself are now in Texas doing engineering work for the American Telegraph Co. Our headquarters are in New York and all communications should be sent there. Address, 15 Dey St., New York City.''—H. H. Bennett expects to be located in Wyoming.—A. E. Shippee is assistant superintendent of the gas department of the Baton Rouge Electrical Company, Baton Rouge, La.—Here is one from Joss, who is in Porcupine, Ont.: "Loring and I have hung out our shingle up here and are trying to keep the wolf from the door. At the same time we are trying to find a possible mine. If we succeed, we shall be back selling blocks of stock to all of you fellows—so don't blow any of your money foolishly *i. e.* at Charlie's Chapel, etc., and we will make you rich beyond our dreams."—Two cards arrived from Bill Kelly and Jack Elbert. (Our sincere regrets that we can not reproduce the views.) "Jack and I are off for a bummel with a couple of other Americans. We expect to have *some* fun.

It looks promising for a big evening with Bill in Berlin. Don't form any false ideas (from the picture)."—E. T. Williams writes from the Imperial Maritime Customs, Newchwang, China, that he is spending his time dodging the plague (in the Customs Service). —Tommy Atherton is at work in Paris; Monty Flagg and some other Tech fellows are with him, 53 Rue de Seina, Paris.—C. W. Gammons, West Newton, Mass., writes, "I spent a short time in Porto Rico for Stone & Webster, but was forced to return because of failure of health. I have not yet returned to work, but expect to do so shortly."—J. R. Baldwin, Box 539, Schenectady, N. Y., is in the testing department of the General Electric Company.— R. L. Cary, 23 Madison St., Princeton, N. J., says, "I am still teaching math, Pop Swain to the contrary notwithstanding. Saw Johnny Brooks yesterday who has returned from Alabama for a while, being full of malaria."—D. W. Sleeper, 141 Mills St., Boston, is a fire insurance inspector with the Underwriters Board of New England.—Ben Pepper and S. L. Burgher also with him.—Sleeper is married and has a son. He is living in Dorchester.—F. M. Loud, 311 Jane St., West Hoboken, N. J., writes that he is still learning the practical end of electric railroading with the Public Service Railway Company.—P. L. Adams is also with the company and Phil Chase is with the affiliated Public Service Electric Company. —G. L. Lawrence is with the W. H. McElwain Company. He is just recovering from an attack of pneumonia and expects to go south to the mountains. He says McCain is in real estate business in Dayton, Ohio, and when last heard of, Pop Swain was still an engineer.—Lincoln Mayo has been enjoying the winter in southern California. He had to give up work in Chicago with D. C. and Wm. B. Jackson about the first of the year on account of ill health. —F. R. Faulkner is at present resident engineer on construction, Kettle River Valley Railway, Westbridge, British Columbia.— W. W. Clifford expected to leave on June 14 for Seattle as hydraulic engineer in the United States Forest Service.—D. G. Haynes, 31? Patent Office, Washington, D. C., says: "Altamirano was in town a couple of weeks ago. He is in electrical engineering for himself in Mexico City.—'Hulsie Bobsizer' is an embryo patent attorney." —Robert E. Doane writes from 404 Hoffman St., Elmira, N. Y., that "Haylett O'Neill, VI, is married and his wife is the 'finest' from the Pacific Coast, and can cook like a southern mammy. If you don't believe it ask A. J. Barnes.''—C. S. Robinson has just taken the position as chemist of the White Lead Works, Sherwin Williams Company, at Chicago, Ill.—Shriefer's card was returned with the information that he is at present in Athasar, Siberia, Russia, and will return about November.—A. B. Morrill writes from Chicago that "Jack Moses is still leading the simple life. Jack says so himself."—Jack writes, "Morrill is going to China this summer to educate the heathen."—Schnieder writes from Topeka that, "It is 97° in the shade."—F. D. Applin is at Fort

Stevens, Ore., and writes that he is having a very good experience as second lieutenant in the Coast Artillery Corps and likes the army life very much.—George T. Palmer is now acting as sanitary inspector in the division of medical and sanitary inspection of the New Jersey State Board of Health.—George Wallis is an instructor of mechanical engineering at the University of Michigan.

New Addresses

"Chil" Sharp is in Virginia City, Nev.—Andrew J. Menzinsky is at Bularvoya, Rhodesia, South Africa.—Phil Wentworth, Box 27, Reno, Nev.—Kenneth E. Carpenter, 25 St. James Ave., Boston.—M. Terry, 302 Williams St., Flint, Mich.—George W. Bowers, Narrangansett Pier.—B. R. Fuller, Olvas Publicas, Santo Domingo, Dominican Republic, West Indies.—F. H. Remick, 3269 Sansom St., Philadelphia, Pa.—Garret Schenck, Jr., superintendent of Bureau of Economy, Great Northern Paper Company, Millinocket, Me.—Arthur M. Rosenblatt, in care of Western States Gas and Electric Company, Placerville, Cal.—M. K. Weill, Apartado 1238, City of Mexico.—H. O. Jenkins, 176 Cowper St., Palo Alto, Cal.—Charles A. Johnson, Richmond, Staten Island, N. Y.—E. L. P. Treuthardt, United States Food and Drug Inspection Laboratory, 518 Tabor Opera House Bldg., Denver, Col.—Lloyd C. Eddy, Jr., Barrington Center, R. I.—B. A. Robinson, 527 Main St., Malden.—Herbert L. Jenness, 54 Bushnell St., Dorchester.—Harry S. Pardee, 6408 Vernon Ave., Chicago, Ill.—Norman Stubbs, 2897 Kenmore Ave., Chicago, Ill.—Sherman Lougee, in care of C. C. Fuller Company, Hartford, Conn.—H. M. Symons, Laramie, Wis.

1910.

JOHN M. FITZWATER, *Sec.*, 119 Henry Street, Brooklyn, N. Y.
G. BERGEN REYNOLDS, *Res. Sec.*, care of W. H. McElwain Co., 348 Congress Street, Boston, Mass.

Edward Stuart's engagement has been announced to Miss Helen L. Fox of Roxbury. Miss Fox is a graduate of Dr. Sargent's training school in Cambridge, class of 1910.—Carroll H. Shaw, who is now in Cleveland, Ohio, has announced his engagement to Miss Natalie Shaw of Kingston, Mass. Miss Shaw is a graduate of Simmons College.—Cards have been received announcing the marriage of Robert F. Burnett, on April 13, to Miss Agnes M. Jones of Chelsea, Mass.

1911.

ORVILLE B. DENISON, *Sec.*, 26 Pearl Street, So. Framingham, Mass.

On Tuesday evening, June 6, in Symphony Hall, we were formally admitted into membership in the Alumni Association. Promptly

at 8.20, to the strains of "Up the Street," our class, 200 strong, entered the hall in four columns, the columns being headed by President Stevens, First Marshal Parker, Second Marshal Denison and Third Marshal Salisbury. When the lines met at the center of the floor, "Don" took the lead followed by the rest of the class. Doctor Noyes then formally presented the '11 banner to Stevens, just as the orchestra swung into the strains of "Dear Old M. I. T." Following the rendition of this favorite, we scrambled to the tables reserved for us at the front of the hall, and from then on enthusiasm was at fever heat. The gay festivities of senior week were brought to a close by this night at the Pops. All of the events of the week were unusually successful and great credit is due the Class Day Committee of twenty-six, and especially to its chairman, First Marshal Parker, whose untiring efforts made our senior week one long to be remembered by all those who attended. The secretary has as yet been unable to send out return postal cards to all members of the class requesting the business address and occupation of each man, but this will be done as soon as the card catalogue of the class, which is now being finally revised and brought up to date, can be secured from Mr. Humphreys. The miners seem to have been particularly fortunate in securing jobs this year. "Jack" McAllen is to return to the Institute as Professor Richards' private assistant, and Mackenzie also expects to return as a laboratory assistant.—Vining will be assistant chemist at the big smelter at Perth Amboy.—Osborne will be a mill hand at Gowganda, Ont.—Van Syckel has also secured a position as a mill hand, and will locate at Lebanon, Pa.—Whorf is going to work in the smelter at Copper Cliff, Ont.—Emmel contemplates a trip to Alaska. Among the electricals there seem to be but a few favored ones.—Ferris is going into telephone work in New York City, while Shurig will enter the same line of work in Philadelphia.—Darrow will be with the testing department of the Goodyear Rubber Company in Akron, Ohio. His running-mate, "Herb" Fryer, will be in charge of the drafting room at the B. F. Sturtevant Company in Hyde Park.—Alling and Marston are to return to the Institute as laboratory assistants, the former in the standardizing laboratory and the latter in the big laboratory. Gaillard is spending the summer in Europe, and "Dutchy" de Romana also expects to "cross the pond."—Davis contemplates entering the engineering corps of the U. S. army.—"Bill" Denton has got a job in Denver. Lougee and Huxley are going to return to the Institute and study for a master's degree.—"Bill" Shepard is going to Pittsfield in the apprentice department. Most of the other Course VI men are as yet undecided.—"Tunnie" Parker and Morrison expect to return as assistants in Course I next fall. "Ed" Vose can't resist the "call of the wild" and will return as an assistant in Course XI. Incidentally he will probably have something to do with next year's show, but this is purely assumption

on the part of the secretary.—"Jim" Campbell is in New York doing some special railroad valuation work for Professor Swain of Harvard.—"Phil" Caldwell is going with the McElwain Shoe Company.—"Bill" Warner has gone out West rustling for a job. "Dick" Gould, as you all know, is engaged (matrimonially), but as yet the secretary has not learned of any business engagement. "Dick" Ranger is busy keeping the Tech Typewriting Bureau going through the summer.—"Fat" Merrill is busily engaged this summer picking up new railroad experiences with which to bore us at our next reunion. Judging from the large number of men who bravely answered "Pete" White's call for engaged men to step on the platform class day, a regularly edited matrimonial department will soon have to be included with the 1911 notes. The secretary hopes that in the November or January issues of the REVIEW he will be able to publish a comprehensive list of the business addresses of the members of the class. This can only be an assured fact, however, through the coöperation of the individual members in promptly answering the cards soon to be sent out. Our class is fortunate in being large, and there is also apparently considerable enthusiasm just now. How long this will last time alone can tell, but certain it is that it can only last by each member of the class taking an individual interest in all class and Institute affairs. This interest can be chiefly manifested by returning to class reunions and by corresponding with the secretary, so that through the latter the class can learn collectively of the doings of the individual members. The secretary welcomes correspondence from each and every member of our large class.

Every regular and special member of the class should become identified with the Alumni Association immediately. It is the most effective organization of its kind of all the colleges in the country and has been largely instrumental in bringing about the new condition of things. Every graduate becomes a member on graduation. The dues are one dollar a year and one dollar a year for the TECHNOLOGY REVIEW if the subscriber's dues are paid; REVIEW subscription to non-members of the Alumni Association, one dollar and a half a year. Special students will be admitted to the association on application for membership which should be sent to Walter Humphreys, secretary, M. I. T. There were formerly two classes of members, associate and regular members, special students being eligible to associate membership only. The association has recently abolished this distinction.

John Avery has received the appointment of town engineer from the selectmen of Watertown.

The Technology Review

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ALUMNI ASSOCIATION

OF THE

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Frederick K. Copeland, '76 (term expires January, 1913).

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Term expires January, 1912

Charles Hayden, '90.
Allan W. Rowe, '01.
Eben S. Stevens, '68.
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Term expires January, 1913

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Term expires March, 1912

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Term expires March, 1913

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Term expires March, 1914

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Edwin S. Webster, '88.
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Term expires March, 1916

Henry Howard, '89.
Henry A. Morss, '93.
Arthur Winslow '81.

Nominating Committee

Term expires January, 1912	Term expires January, 1913	Term expires January, 1914
F. H. Hunter, '02.	F. H. Fay, '93.	A. F. Bemis, '93.
E. H. Huxley, '95.	W. B. Snow, '82.	E. S. Webster, '88.
H. W. Tyler, '84.	C.-E. A. Winslow, '98.	F. L. Locke, '86.

STANDING AND SPECIAL COMMITTEES

Committee on Permanent Funds

James P. Munroe, '82, to serve until the annual meeting in 1912.
Robert H. Richards, '68, to serve until the annual meeting in 1913.
Francis C. Green, '95, *Treasurer*, to serve until the annual meeting in 1914.

Advisory Council on Athletics

Allan W. Rowe, '01 (term expires in 1911).
J. L. Batchelder, '90 (term expires in 1912).
J. Arnold Rockwell, *Chairman*, '96 (term expires in 1913).

Committee on Publication of The Technology Review

Walter Bradlee Snow, '82.
Walter Humphreys, '97.
Arthur Amos Noyes, '86.
Frederic H. Fay, '93.
Isaac White Litchfield, '85, *Editor*.

Walker Memorial Committee

Harry W. Tyler, '84, *Chairman*.
Charles M. Baker, '78, *Treasurer*.
Charles-Edward A. Winslow, '98, *Secretary*.

Robert H. Richards, '68.
Everett Morss, '85.
John L. Batchelder, '90.
Thomas Hibbard, '75.
William B. Thurber, '89.
Albert F. Bemis, '93.

Tech Show Advisory Council

M. L. Emerson, '04.
I. W. Litchfield, '85.

Committee on Musical Affairs

George B. Glidden, '93, *Chairman*.
Harry S. Mork, '99.
Maurice R. Scharff, '09.

Committee on Summer School of Surveying

Leonard Metcalf, '92, *Chairman*.
F. H. Fay, '93.
A. F. Bemis, '93.

COUNCIL OF THE ALUMNI ASSOCIATION

Officers of the Association:—

President, A. A. Notes, '86.
Vice-Presidents, J. W. Rollins, '78, Frederick K. Copeland, '76.
Secretary-Treasurer, Walter Humphreys, '97.
Executive Committee, { Walter E. Piper, '94. George W. Swett, '03. } Frank W. Hodgdon, '76. Eugene C. Hultman, '96.

Five latest living ex-Presidents:—

Frank L. Locke, '86.
Everett Morss, '85.
Walter B. Snow, '82.
Edwin S. Webster, '88.
A. F. Bemis, '93.

Representatives at large:—

Eben S. Stevens, '68.
Oakes Ames, '85.
Harry E. Clifford, '86.
Stoughton Walker, '87.
Charles Hayden, '90.
Willis R. Whitney, '90.
George V. Wendell, '92.
Franklin T. Miller, '95.
Howard L. Coburn, '98.
Allan W. Rowe, '01.

Class Representatives:—

'68, Robert H. Richards.
'69, Howard A. Carson.
'70, E. K. Turner.
'71, E. W. Rollins.
'72, Edgar W. Upton.
'73, F. H. Williams.
'74, George H. Barrus.
'75, Thomas Hibbard.
'76, C. T. Main.
'77, John Alden.
'78, C. M. Baker.
'79, E. C. Miller.
'80, George H. Barton.
'81, John Duff.
'82, James P. Munroe.
'83, Harvey S. Chase.
'84, Harry W. Tyler.
'85, I. W. Litchfield.
'86, A. A. Notes.
'87, E. G. Thomas.
'88, Arthur T. Bradlee.
'89, Henry Howard.
'90, William Z. Ripley.
'91, Charles Garrison.
'92, Leonard Metcalf.
'93, Frederic H. Fay.
'94, S. C. Prescott.
'95, Andrew D. Fuller.
'96, J. A. Rockwell.
'97, C. W. Bradlee.
'98, W. Hollis Godfrey.
'99, H. J. Skinner.
'00, N. J. Neall.
'01, Robert L. Williams.
'02, F. H. Hunter.
'03, Myron H. Clark.
'04, M. L. Emerson.
'05, G. DeW. Marcy.
'06, John J. Donovan.
'07, Lawrence Allen.
'08, H. T. Gerrish.
'09, M. R. Scharff.
'10, Herbert S. Cleverdon.
'11, Orville B. Denison.

Local societies with representation on the Council:—

Technology Club of the Merrimack Valley, Charles H. Eames, '97
Technology Club of New York, Francis C. Green, '95.
North-Western Association, M. I. T., I. W. Litchfield, '85.
Pittsburg Technology Association, Harry A. Rapelye, '08.
Technology Club of Philadelphia, William H. Blakeman, '05.
Washington Society of the M. I. T., I. W. Litchfield, '85.
Technology Club of Milwaukee, I. W. Litchfield, '85.
M. I. T. Club of Central New York, James P. Barnes, '05.
The Cincinnati M. I. T. Club, John A. Hildabolt, '75.
Technology Club of Northern Ohio, John E. Krepe, '87.
Technology Club of Rhode Island, E. B. Homer, '85.
Technology Club of Puget Sound, I. W. Litchfield, '85.
Technology Club of Southern California, John C. Chase, '74,
Technology Association of New Hampshire, Albert W. Thompson, '96.

Other local societies not yet appointed a representative on the Council:—

Technology Club of Buffalo.
Technology Club of Central Pennsylvania.
Technology Club of the Connecticut Valley.
Detroit Association of the M. I. T.
Technology Club of Hartford, Conn.
Inland Empire Association of the M. I. T.
Technology Club of Minnesota.
Technology Club of New Bedford.
Technology Association of Northern California.
Technology Association of Oregon.
Rocky Mountain Technology Club.
Technology Club of the South.
Vermont Technology Association.
Brookline Technology Association.

CLASS SECRETARIES

ROBERT HALLOWELL RICHARDS . . . . . '68
Massachusetts Institute of Technology, Boston.

HOWARD ADAMS CARSON . . . . . '69
79 Glenwood Street, Malden, Mass.

CHARLES ROBERT CROSS . . . . . '70
Massachusetts Institute of Technology, Boston.

EDWARD WARREN ROLLINS . . . . . '71
Dover, N.H.

CALVIN FRANK ALLEN . . . . . '72
Massachusetts Institute of Technology, Boston.

SAMUEL EVERETT TINKHAM . . . . . '73
126 Thornton Street, Roxbury, Mass.

CHARLES FRENCH READ . . . . . '74
Old State House, Boston, Mass.

EDWARD A. W. HAMMATT. . . . . '75
Hyde Park, Mass.

JOHN RIPLEY FREEMAN . . . . . '76
815 Banigan Building, Providence, R. I.

RICHARD AUGUSTUS HALE. . . . . '77
Essex Company, Lawrence, Mass.

E. P. COLLIER . . . . . '78
274 Summer Street, Boston, Mass.

EDWIN CHILD MILLER . . . . . '79
Wakefield, Mass.

GEORGE HUNT BARTON. . . . . '80
16 Lexington Avenue, Cambridge, Mass.

FRANK ELDEN CAMP . . . . . '81
Metcalfe Apartments, Westmount, Quebec, P.Q.

FRANK H. BRIGGS . . . . . '81
Ass't Secretary, 22 High St., Boston, Mass.

WALTER BRADLEE SNOW . . . . . '82
170 Summer Street, Boston, Mass.

HARVEY STUART CHASE . . . . . '83
84 State Street, Boston, Mass.

HARRY W. TYLER . . . . . '84
Massachusetts Institute of Technology, Boston.

ISAAC WHITE LITCHFIELD . . . . . '85
Massachusetts Institute of Technology, Boston.

ARTHUR GRAHAM ROBBINS. . . . . '86
Massachusetts Institute of Technology, Boston.

EDWARD GALBRAITH THOMAS . . . . . '87
Boss Mfg. Co., Kewanee, Ill.

WILLIAM GAGE SNOW . . . . . '88
24 Milk Street, Boston, Mass.

WALTER H. KILHAM . . . . . '89
9 Park Street, Boston, Mass.

GEORGE L. GILMORE . . . . . '90
Lexington, Mass.

HOWARD CARLETON FORBES . . . . . '91
88 Broad Street, Boston, Mass.

W. SPENCER HUTCHINSON . . . . . '92
1235 Morton Street, Mattapan, Mass.

W. A. JOHNSTON . . . . . '93
Ass't Secretary, Mass. Institute of Technology.

FREDERIC HAROLD FAY . . . . . '93
60 City Hall, Boston, Mass.

SAMUEL CATE PRESCOTT . . . . . '94
Massachusetts Institute of Technology, Boston.

GEORGE A. ROCKWELL. . . . . '95
101 Tremont Street, Boston, Mass.

CHARLES E. LOCKE. . . . . '96
Massachusetts Institute of Technology, Boston.

JOHN ARTHUR COLLINS, JR. . . . . '97
67 Thorndyke Street, Lawrence, Mass.

ERNEST F. RUSS . . . . . '98
70 High Street, Boston, Mass.

HERVEY JUDSON SKINNER . . . . . '99
93 Broad Street, Boston, Mass.

NEWITT J. NEALL . . . . . '00
12 Pearl Street, Boston, Mass.

ROBERT L. WILLIAMS . . . . . '01
154 Magazine Street, Cambridge, Mass.

FREDERICK HUSTON HUNTER . . . . . '02
281 Park Street, West Roxbury, Mass.

FREDERIC ARTHUR OLMSTED . . . . . '02
Care of Williamette Pulp & Paper Co., Oregon City, Oregon.

R. H. NUTTER . . . . . '03
Ass't Secretary, Box 272, Lynn, Mass.

EVERETT OSGOOD HILLER. . . . . '04
Technology Chambers, Boston, Mass.

ADDISON F. HOLMES . . . . . '04
Ass't Secretary, 7 Holborn St., Roxbury, Mass.

GROSVENOR DEWITT MERCY . . . . . '05
246 Summer Street, Boston, Mass.

RALPH R. PATCH . . . . . '06
15 Lincoln Street, Stoneham, Mass.

BRYANT NICHOLS . . . . . '07
143 Garland Street, Everett, Mass.

HAROLD S. WONSON . . . . . '07
Ass't Secretary, 149 East Main Street, Gloucester, Mass.

JOHN T. TOBIN . . . . . '08
Care of F. F. Harrington, Bridge Engineer, Virginian Ry. Co., Norfolk, Va.

RUDOLPH B. WEILER . . . . . '08
Ass't Secretary, Care of Sharples Separator Co., West Chester, Pa.

CARL W. GRAM . . . . . '09
Care of Walter Baker Co., Milton, Mass.

JOHN MOXCEY FITZWATER . . . . . '10
119 Henry Street, Brooklyn, N.Y.

G. BERGEN REYNOLDS . . . . . '10
142 Highland Ave., Somerville, Mass.

O. B. DENISON . . . . . '11
49 Institute Road, Worcester, Mass.

LOCAL ALUMNI ASSOCIATIONS

Boston — Technology Club of Boston, Dr. Robert Seaton Williams ('02), Secretary, 83 Newbury Street, Boston, Mass.

☞ Luncheon — The classes from '01 to '10 meet at the American House Rathskeller, Hanover Street, Fridays, 12.30 to 1.30 p. m.

Brookline — Brookline Technology Association, George Lawrence Smith ('97), Secretary, 20 Central Street, Room 7, Boston.

Buffalo — Technology Club of Buffalo, R. F. Morgan ('96), Secretary, 139 W. Oakwood Pl., Buffalo, N. Y.

Chicago — North-Western Association of the M. I. T., Meyer J. Sturm ('96), Secretary, 118 N. La Salle Street, Chicago, Ill.

☞ Luncheon — Thursdays at 12.30 p. m. at Grand Pacific Hotel, 178 Madison Street.

Cincinnati — The Cincinnati M. I. T. Club, Stuart R. Miller ('07), Secretary, 3366 Morrison Avenue, Clifton, Cincinnati, Ohio.

☞ Luncheon — Tuesdays from 12 to 1.30 p. m. at Bismarck Grill, Walnut Street.

Cleveland — Technology Club of Northern Ohio, Sidney Young Ball ('03), Secretary, 1847 East 97th Street, Cleveland, Ohio.

Denver — Rocky Mountain Technology Club, Walter H. Trask, Jr. ('06), Secretary, Box 1802, Denver, Col.

Detroit — Detroit Technology Association, Currier Lang ('04), Secretary, care of Solvay Process Co., Detroit, Mich.

Hartford — Technology Club of Hartford, Conn., George William Baker ('92), Secretary, Box 983, Hartford, Conn.

Japan — Technology Association of Japan, Dr. Takuma Dan ('78), Secretary-Treasurer, 17 Tango-cho Akasaka-Ku, Tokio, Japan.

Lawrence } — Technology Club of the Merrimack Valley, John Arthur Collins, Jr. ('97), Secretary, 67
Lowell } Thorndyke Street, Lawrence, Mass.

Los Angeles — Technology Club of Southern California, L. A. Parker ('06), Secretary, 689–691 Pacific Electric Building, Los Angeles, Cal.

Manchester — Technology Association of New Hampshire, G. S. Gould ('07), Secretary-Treasurer, 102 Webster Street, Manchester, N. H.

Manila — Technology Club of the Far East, William A. Adams ('08), Secretary, Bureau of Lands, Manila, P. I.

Milwaukee — Technology Club of Milwaukee, Mitchell Mackie ('05), Secretary, Commercial Auto Co., Milwaukee, Wis.

Minneapolis — Technology Club of Minnesota, Clifford C. Hield ('10), Secretary, 1722 Fremont Ave. S., Minneapolis, Minn.

New Bedford — Technology Club of New Bedford, Mass., Charles Frederic Wing, Jr. ('99), Secretary, 36 Purchase Street, New Bedford, Mass.

New Orleans — Technology Club of the South, Frank Wyman Crosby ('90), Secretary, 501–504 Denegre Building, New Orleans, La.

New York — Technology Club of New York, Walter Large ('79), Secretary, 15 William Street, New York, N. Y.

Philadelphia — Technology Club of Philadelphia, W. H. Blakeman ('05), Secretary, 1618 Green Street, Philadelphia, Pa.

Pittsburg — Pittsburg Technology Association, L. K. Yoder, ('95), Secretary, 5810 Murrayhill Place, Pittsburg, Pa.

Portland — Technology Association of Oregon, Antoine Gilbert Labbé ('07), Secretary, 227½ Washington Street, Portland, Ore.

Providence — Technology Club of Rhode Island, William C. Dart ('91), Secretary, 148 West River Street, Providence, R. I.

☞Luncheon — Thursdays at 12.30 p. m., at Brucker's Hotel.

Rochester — Technology Club of Rochester, J. F. Ancona ('08), Secretary, 190 Birr Street, Rochester, N. Y.

St. Louis — Society of the M. I. T., St. Louis, Amasa M. Holcombe ('04), Secretary-Treasurer, care of Carr & Carr, 510 Pine Street, St. Louis, Mo.

San Francisco — Technology Association of Northern California, Howard Coburn Blake ('08), Secretary, 926 6th Street, Sacramento, Cal.

Seattle — Technology Club of Puget Sound, L. A. Wallon ('04), Secretary, The Seattle Electric Company, Seattle, Wash.

Spokane — Inland Empire Association of the M. I. T., Philip F. Kennedy ('07), Secretary, 01120 Hamilton Street, Spokane, Wash.

Springfield — Technology Club of the Connecticut Valley, Ernest W. Pelton ('08), Secretary, 77 Forest Street, New Britain, Conn.

Steelton — Technology Club of Central Pennsylvania, Stephen Bedlam ('00), Secretary, Box 123, Steelton, Pa.

Syracuse — M. I. T. Club of Central New York, H. N. Burbank ('07), Secretary, 227 McLennan Avenue, Syracuse, N. Y.

Washington — Washington Society of the M. I. T., Delos G. Haynes ('09), Secretary, United States Patent Office, Washington, D. C.

☞Luncheon — Wednesdays at 12 to 1 p. m. at Wallis' Café, 617 Twelfth Street.

Worcester — Worcester County Technology Club, H. M. Latham ('96), Secretary, 94 Grove Street Worcester, Mass.

FIXED LUNCHEONS

Boston — the '01-'10 Luncheon Club at American House Rathskeller, Fridays, 12.30-1.30 p. m.

Chicago—Northwestern Association of M. I. T., at Grand Pacific Hotel, Thursdays at 12.30 p. m.

Cincinnati — Cincinnati M. I. T. Club at the Bismarck Grill, Walnut Street, Tuesdays, from 12 - 1.30 p. m.

Providence — Technology Club of Rhode Island, at Brucker's Hotel, Thursdays at 12.30 p. m.

Washington—Washington Society of the M. I. T. at Wallis' Café, 617 Twelfth Street, Wednesdays, at 12-1 p. m.

View of Esplanade in front of Charles River Basin site.

The Technology Review

Vol. XIII. NOVEMBER, 1911 No. 8

SITE CHOSEN FOR THE INSTITUTE

Fifty acres of land on the Charles River Basin will be purchased if conditions are complied with—Location is a dominating one with great possibilities for development—Area is nearly as great as that of Boston Common

Announcement was made by the Institute Corporation, October 11, that a site for the new Technology had been chosen on the Cambridge side of the Charles River Basin opposite the Back Bay section of Boston, between Harvard and West Boston bridges; the purchase of this land being contingent upon the closing of certain streets on the property by the city of Cambridge and the delivery of a good title by the owners.

The tract in question comprises nearly fifty acres of land with a frontage of nearly one third of a mile on the Charles River Basin esplanade and about a quarter of a mile on Massachusetts Avenue. It extends back from the river to the tracks of the Grand Junction Railroad operated by the Boston & Albany. The property is crossed by several proposed and accepted streets as shown on the map, page 483, although these streets have not been actually constructed. The Corporation proposes as a condition of purchase, that the city of Cambridge close all these streets with the exception of Vassar Street which runs near the railroad tracks and parallel with them and which will be extended to Main Street as a teaming thoroughfare.

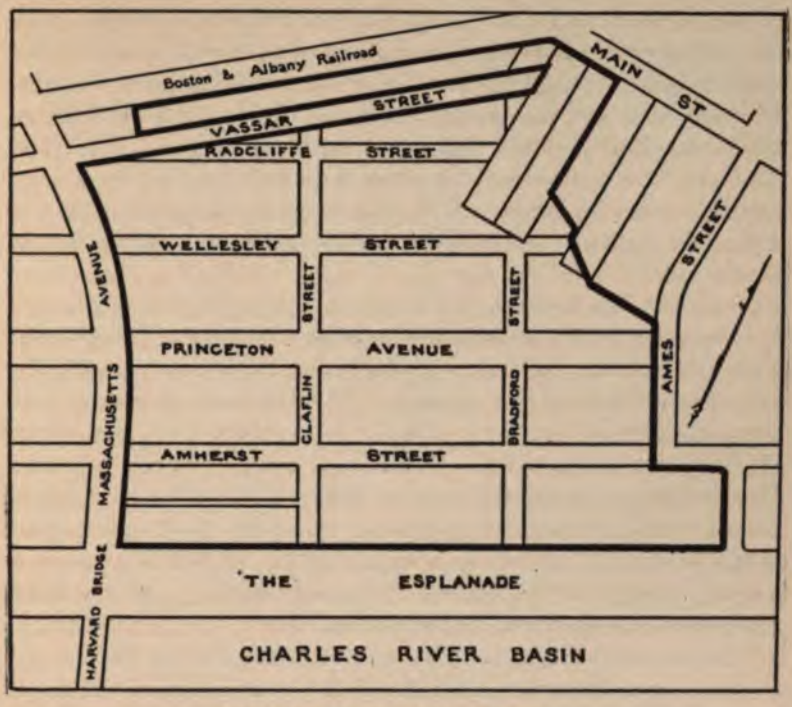
The announcement of the selection of this site was received with profound satisfaction by the Faculty and the alumni as well as by the people of Boston. Although there has been much diversity of opinion as to which one of the contemplated sites should be selected, the strategic character of the land chosen, its wonderful possibilities of development, its generous area and

its accessibility, appeal strongly to every interested person. The chief act now remaining to complete the transaction, is an enactment by the city of Cambridge closing certain streets on the property, and in view of the numerous and cordial invitations which the Institute has received from representative bodies in Cambridge, to locate there, it seems likely that the conditions of acceptance demanded by the Institute will be complied with.

The harmonious development of an imposing building group on the chosen site calls for treatment on a broad and generous scale as befits the most prominent location in Metropolitan Boston. In connection with the esplanade and the beautiful sheet of water lying before it, the imagination of the artist revels in the splendid architectural opportunities presented. But even of greater importance in the building scheme is availability for purposes of education and research with proper regard to growth and departmental balance, desiderata which call for judgment and engineering talent of unusual character. Happily the Institute has within itself all the elements necessary to cope with this important problem, but it will be some months before sufficient specific data has been collected to actually proceed with the details of the building plans.

The most striking feature of this final act which has determined the policy of the Institute for many years to come, is the exhibition of courage on the part of the Corporation in securing the new site at an expenditure of approximately three quarters of a million dollars and in making plans for erecting buildings which will cost millions, without halt or hesitation. The purpose and faith which marked the beginnings of the Institute of Technology appear again in the action of the Corporation authorizing this important step forward, a step which is made possible by duPont's generous gift, the increased appropriation from the State of Massachusetts and the splendid coöperation of the Faculty and alumni.

The selection of the new site was made by a committee consisting of the President, Messrs. George Wigglesworth, Frank H. Hart, '89, Edwin S. Webster, '88, and Everett Morss, '85, which was appointed early in June after the various sites had been fully discussed by the Corporation. Although about one hundred sites were offered to the Institute, the five sites considered by the special committee were as follows: near the Stadium in Cambridge; Jamaica Plain near Jamaica Pond; the Allston Golf



MAP OF CAMBRIDGE SITE

The heavy black lines on the plan show the area in Cambridge which it is proposed to buy as a new site for Technology. The lines enclose 1,999,706 square feet of land, or nearly 50 acres.

Club near Cottage Farm bridge; a location in the Fenway; the Charles River Basin site. The committee has been very active during the summer and thoroughly canvassed the merits of these five parcels, and when the final selection was made the committee was unanimous in its decision. The Stadium site was eliminated first. The Jamaica Plain property was not large enough for the purposes of the Institute, and a site in the Fenway of suitable size would have been far and away beyond our means. Between the Allston Golf Club and the Charles River Basin property the weight of opinion favored the latter.

The site selected is more convenient for the students generally, than any other. It is within a very few minutes of the center of Boston by the new Cambridge subway, which runs near one side

of the property and it can be quickly reached from Copley Square by surface cars. It is a comparatively quiet location, the surface cars on Massachusetts Avenue being the only disturbing element. It is ample in size and comes within the ideas of the Institute as to price. It is comparatively free from smoke and dirt. It is likely to be a permanent home for the Institute for fifty or one hundred years to come as the land is extensive enough for any expansion that may reasonably be expected to take place during that period.

Along the Charles River esplanade southwest of Harvard bridge is every opportunity for building fraternity houses and dormitories, although some of the fraternity houses are now located within a very few minutes of the property. It is to be remembered that the esplanade on the river side of the property embraces about eight acres of park, which is in effect an addition to the property. One important consideration in connection with this new location is that it will give generous space for an athletic field with a commodious stadium as well as a gymnasium. It will also afford a proper setting for the Walker Memorial building which will be made a notable center of student social life.

"To be rated of greatest importance," said Doctor Maclaurin, in speaking of the new site, "is the fact that it will offer to Boston a splendid opportunity for improving the Charles River Basin. That is a feature which has wonderful possibilities, opportunities that hardly seem to be realized by the citizens as a whole. Scarcely a city in the world has such splendid opportunities."

General attention has recently been called to the possibilities of the Charles River Basin as a recreation center, by various civic organizations coöperating with the Boston-1915 movement. Although it did not prove feasible to construct an island in the Charles River on which to locate the Institute of Technology, it is not unlikely that a narrow island of somewhat irregular form may be constructed near the Harvard bridge to add a picturesque element to the view and to afford the public a recreation ground. It is proposed to break the austerity of the straight lines of the basin by piers, boat houses, etc., and to encourage all kinds of aquatic sports. The prospect of a strikingly beautiful group of buildings on the new Institute site, will give a strong impetus to this movement and it has even been suggested that money may be forthcoming from some source to create an impressive water

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VIEW OF BEACON STREET HOUSES FROM HARVARD BRIDGE.

Courtesy of Boston–1915

BOSTON SIDE OF THE CHARLES RIVER ESPLANADE

Courtesy of Boston–1915

approach to the Institute, with broad steps leading to a grand entrance on the esplanade opposite the main approach to the buildings.

The natural advantages of the Charles River Basin are similar to those of the Alster Basin, at Hamburg, Germany, which has been made beautiful and attractive for pleasure seekers, along the lines now proposed for Boston.

As has already been indicated, the sum of money required for building will be perhaps larger than has heretofore been considered. Furthermore, it is imperative that we secure a large amount of money within a reasonable time for other reasons: The gift of General T. Coleman duPont, '84, of half a million dollars is contingent of our securing a million and a half more during the next five years from other sources, while the appropriation of one hundred thousand dollars a year for ten years by the State of Massachusetts was conditional on our having raised a million dollars at the end of a period of five years.

It is a matter of great satisfaction that the gift of an Institute alumnus should have made this forward step of the Institute possible, and that the great body of the alumni desires to do its part is a matter of common knowledge. Plans are now being made for a fund which is to be raised for general building purposes, and when the title to the property has actually passed into the hands of the Institute an active campaign will be started. It is believed that the response will be hearty and generous, and whether many very large sums are forthcoming or not it is sure that there will be an enormous number of moderate or small contributions such as characterized the Technology Fund which carried the Institute through a very critical period in its history. It will, however, be impossible for the alumni to give, of their own substance, a sufficient sum to build the new buildings. It is understood that some generous friends of the Institute are likely to assist in a large way, and it is hoped and believed that the sum necessary will be contributed long before it is actually needed.

One of the most important considerations in connection with the site is the fact that for some years, at least part of the Institute work will have to be conducted in the Boylston Street buildings and it is therefore quite necessary that the new Institute should be as convenient to Copley Square as possible, a condition which will be filled by the Cambridge site. This property is

curiously restricted so that we are bound to use these buildings for some time to come and it is out of the question to sacrifice this parcel as it will ultimately be extremely valuable.

The report of the site committee as presented to the Corporation reads as follows:

"The special committee on the site has worked continuously from the time of its appointment and has found the problem presented to it far from a simple one. The selection of a site has not been merely a question of deciding upon the best location and coming to an agreement about price, but it has involved in the case of two of the sites most seriously considered the removal of restrictions, the closing of projected or legally accepted streets and other difficulties not apparent until actual negotiations were undertaken.

"Your committee has been absolutely unanimous in its opinions and decisions, and while it cannot today state that it has actually secured a site for the Institute, it has made such headway that it feels that satisfactory progress can be reported.

"Representatives of the owners of the large tract on the Cambridge river bank east of Massachusetts Avenue, known to your Corporation as the Cambridge site, have pledged themselves as far as possible to transfer the land to the Institute, free from all existing restrictions, on terms more favorable to the Institute than have so far been obtained with reference to other sites of similar value. Your committee has informed these representatives that, subject to certain restrictions being removed and a number of roads closed by proper action on the part of the city government of Cambridge, a good title being given within a reasonable time, the Institute will purchase and pay the price agreed upon. The tract referred to consists of about fifty acres and has a frontage of 1750 feet to the esplanade on the river bank and 1150 feet to Massachusetts Avenue. In view of the possibility of it proving impracticable to the owners of this tract to fulfil the stipulations of this agreement, your committee has not ended its consideration of other sites, and continues to hold important options on other lands."

In response to a request from the REVIEW several well known alumni have expressed their views about the new site as follows:

Frank L. Locke, '86, ex-president of the Alumni Association:—

It seems to me that the location has many very attractive features: notably, the splendid setting which the Charles River Basin fur-

nishes for the display of the buildings; its accessibility to the center of the city; its proximity to vacant land available for buildings to house the students; and its immediate contact with the water park, offering endless opportunity for sport, exercise and recreation.

To me, the strongest objection to the site has been the fact that it is in Cambridge and that this in all probability will ultimately mean the complete removal of the Institute from Boston.

Few realize, I think, the difficult task which has been imposed upon the Corporation and its special committee in selecting a suitable site. I am sure we may all feel that the problem has been solved in true Technology fashion, and that, considering all points, the most desirable location has been chosen. Now, and more important than the selection of the site, is the hearty coöperation of every Tech man in the upbuilding of a new Technology which shall be a splendid monument to its founders and to the traditions of the institution.

Walter B. Snow, '82, ex-president of the Alumni Association:—No matter what opinion one may have held regarding the site question, he must now be convinced that the committee has chosen the best. It lends itself as does no other suggested location to the most symmetrical and economical arrangement of the buildings and the most effective impression upon the largest number of people. Although Boston will lose the buildings themselves she will be rewarded with the beauty of the prospect across the basin. Few institutions in the country have had before them such an opportunity for serving the æsthetic taste of the public and at the same time fulfilling their own requirements. The site carries with it a unique asset in the matter of the 200 feet wide shaded esplanade extending along its front and containing an open area of about eight acres, across which the basin may be viewed.

The distance from the former site is really negligible when electric car service is considered, in fact as a general proposition the new site is practically as accessible as the old. Rapid developments in Greater Boston's transportation system will soon remove what little objection there may be to the new location on this account.

Thankful as the present generation must be to duPont for his generous financial support, future generations will rise up and call him blessed when they realize that above all else it was his insist-

ence upon ample area that insured the purchase of a tract much larger than was originally considered. So far as we can now foresee this will provide room for normal growth for years to come, and meanwhile make possible the concentration of all activities, educational, athletic and social, within its limits. Only as the work proceeds will the alumni fully appreciate the wisdom and the untiring efforts of the special committee,—President Maclaurin, former Treasurer Wigglesworth, Morss, '85, Webster, '88, and Hart, '89, to whom all credit is due.

A. F. Bemis, '93, ex-president of the Alumni Association:—The essentials for a new site for the Institute are size, convenience, cost, prominence, durability and a good relation to other educational institutions. The first four of these essential features are clearly found in the new site selected on the north bank of the Charles River Basin. It is hardly necessary to say a word in justification of the site in connection with those points. The area is practically the maximum suggested by any one as necessary for the new Technology, and there is clearly no other site obtainable in Metropolitan Boston of equal size, convenience and prominence at a cost within the present or prospective means of the Institute.

Probably the most difficult problem to solve in selecting the new site was that of durability or permanence of its effectiveness. With the very rapid changes that are occurring in the character of localities in modern times, and with even more rapid and drastic changes that should be expected in the future, no new site could be considered at all, that did not offer definite promise of continued effectiveness for the Institute's purposes for the next fifty or one hundred years. A study of other large cities, especially in Europe, will show how the banks of great and beautiful water parks, such as the Alster Basin in Hamburg, the Thames in London, and similar features in Paris, Stockholm and other cities, have been selected for the location of great institutions and beautiful buildings, not only because of their prominence and attractiveness of outlook, but because the permanence of their character has been established and guaranteed by the public good. For this reason it is safe to predict that no location in Metropolitan Boston will remain more permanently effective for a public or semi-public institution than the borders of our new Charles River Basin.

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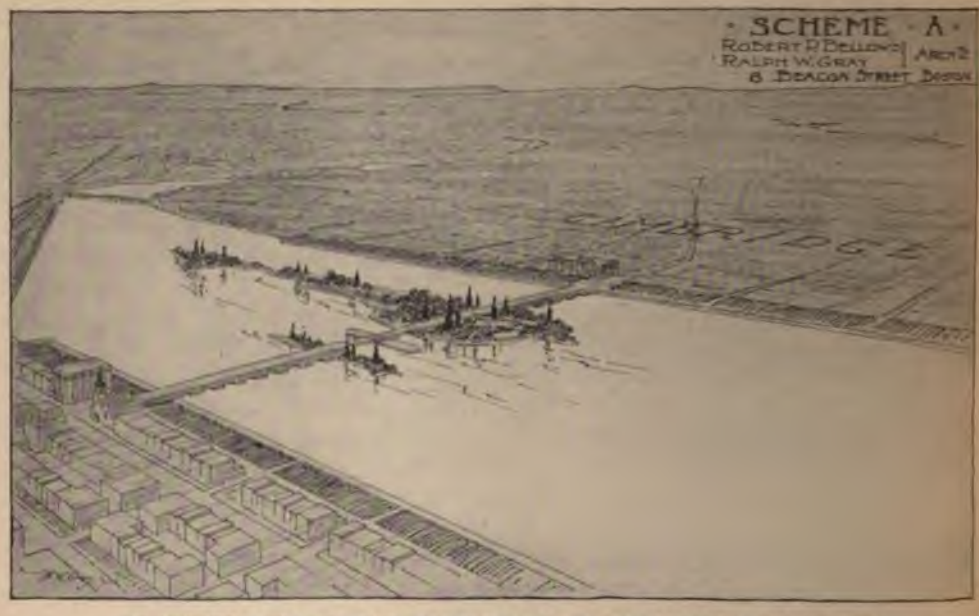


PROPOSED ISLAND FOR RECREATION AND OTHER PURPOSES

Courtesy of Boston–1915

AN ISLAND IN THE SEINE AT ROUEN

Courtesy of Boston–1915

In the present age and in the years to come it is reasonable to expect, if not to demand, increased co-operation between educational institutions. The one institution in this vicinity with which the Institute can best co-operate, and from which it should expect the largest measure of co-operation, is Harvard University. Probably no site has been considered for the new Technology offering greater opportunities for real and effective co-operation between these two institutions than the one selected, which is only about ten minutes' distance, by electric cars, from Harvard Square.

Whereas other sites that were considered may have had greater advantages in one direction or another, it is clear there was none which so nearly fulfilled all the essential requirements as the one selected. If it has one feature more lasting in importance than any other it is its great prominence of location in the very center of Metropolitan Boston. This advantage is not so much because it will command the attention and interest of all people in this vicinity and strangers who visit us, but because it will put upon us the obligation which we desire, to be even greater in our service to Metropolitan Boston, the Commonwealth of Massachusetts, and mankind generally, than the mere prominence of our physical plant in the "Hub of the Universe."

Arthur A. Noyes, '86, president of the Alumni Association:—We alumni certainly have good reason to rejoice over the recently announced plans of the Corporation of the Institute. The decision (contingent on favorable action by the Cambridge authorities as to the abandonment of certain proposed streets) to remove the Institute to the Charles River bank, will not only settle the long-discussed site problem, thus making it practicable to prosecute energetically the plans for our future development, but it will settle that problem in a manner more satisfactory than could have been hoped for. The extraordinary accessibility of the chosen site to the heart of Boston and to nearly all its suburbs; the striking conspicuousness of the location with its 1750-feet frontage on the Charles River Basin, destined to become the chief pleasure resort of the people of Boston; its open situation with abundance of air and light and comparative freedom from noise, smoke, and mechanical disturbances; its connection at the rear with a freight railroad by which coal, machinery, and merchandise can be brought to its power station and laboratories; the large area of land secured, making bountiful provision not only for any possible future growth

of the educational buildings of the Institute, but also for the immediate social and athletic needs of our student life; the exceptional facilities for aquatic sports; the opportunity afforded by the unoccupied land near the site on the river bank above Massachusetts Avenue for attractively located student houses;—all these are features which, taken together, make the location an almost ideal one.

These obvious advantages will, it may be predicted, so appeal to our alumni, to the public-spirited citizens of this neighborhood, and to the manufacturers of the country whose industries are dependent on the success of such education as the Institute affords, that the task of securing the large fund needed for the proper development of the Institute will be greatly facilitated.

Tech Men Receive Doctor's Degrees

Science for August 18 contains a list of persons receiving the doctor's degree at principal American Universities. Among them are four Institute graduates:

C. S. McGinnis, '06, at the University of Pennsylvania, on "The Transmission of Sound through Porous and Non-Porous Materials."

G. B. Obear, '03, at Brown University, on "The Hygrometric Properties of Gelatinous Media."

E. L. Chaffee, '07, at Harvard, on "A New Method of Impact Excitation of Undamped Electric Oscillations and their Analysis by Means of Braun Tube Oscillations."

F. C. Lincoln, '00, at Columbia University, on "Certain Natural Associations of Gold."

A Correction

We have received a note from Mr. W. Felton Brown making a correction in a recent article on the Huntington Hall Frieze. In this article credit is given Mr. K. E. Carpenter, '09, for the panel having for its subject, "Ship Building." The author of this panel is Mr. H. DaLand Chandler, '09, who should have credit for one of the best things the frieze has to show.

HEARING BY CAMBRIDGE CITY COUNCIL

The Institute will not locate there unless certain streets on property are closed—There will be another hearing before Council acts

At the hearing given by the Cambridge City Council, November 14, relative to the closing of certain streets on the proposed Technology site, President Maclaurin of the Institute, indicated very clearly that although Technology was desirous of acquiring the tract and doing its part to beautify the city, it had no desire to force itself upon the community and would prefer to choose from among the other sites still available rather than to go where it was not welcome.

The hearing was very largely attended and there were many speakers who occupied the time until 11 o'clock when the meeting was adjourned for a week. There was some objection to the closing of Amherst Street, from manufacturers who have located in the immediate vicinity. Those who spoke against the proposed measure were Joseph Eustis, J. R. Wilson, of the Page & Shaw Candy Co., Frederick A. Fiske, Sidney J. Monk, and Gilbert A. A. Peavey. The main objection raised by these men was that the closing of the streets would cut off a direct road between Harvard Bridge and their factories.

Among those who spoke in favor of closing the streets were Gen. William A. Bancroft, John H. Corcoran, representing the Cambridge Board of Trade, which was one of the bodies who extended a cordial invitation to the Institute to come to Cambridge, Edmund A. Whitman, president of the Cambridge Club, James J. Scully, Henry J. Cunningham, W. S. Youngman and Allen Apsey. They spoke of the many advantages the city would have if the Institute should move across the river.

Hon. Fred W. Dallinger, president of the Cambridge Board of Trade wrote a letter favoring the petition. Ex-Representative Meyers objected to granting the petition on the ground that no

more land should be made exempt from taxation for educational purposes.

On the part of the Institute, President Maclaurin said that Technology was willing to do whatever was possible to meet the objections of individual citizens, but it could not agree to take the land if the streets with the exception of Vassar Street are not closed.

He felt confident the City Council would look at the question from a broad view. He said he believed Technology is the greatest institution of its kind in the world and referred to the advantages that would accrue to Cambridge if it located there.

The Institute never would have considered Cambridge as its site, he said, had not assurances of welcome been given through petitions and official invitations, and declared that if the petition asking for the closing of Amherst Street were refused Technology would withdraw and select a site in one of the other communities which had offered inducements.

In a newpaper interview on the day of the hearing President Maclaurin said:

"It should be clearly understood that the Institute of Technology can buy all the land it may want in Cambridge without approaching the City Council. It may buy such land and use it for any purpose that falls within the scope of its charter, but if it is to use this land as the site for its future buildings, then the closing of Amherst Street and the transfer of all rights therein to the Institute is absolutely essential. To have such a street running through its property would interfere most seriously with its plans for building and such a street close to its main buildings would set up mechanical and electrical disturbances that would make these buildings unsuited for the scientific purposes for which they are designed. It must be clearly understood, therefore, that the Institute can not consider this property as a site for its buildings whatever other use it may put it to, if Amherst Street is to remain open. Perhaps I should add that if the Institute acquires a satisfactory title to all the property that has been referred to, *including Amherst Street*, it will proceed at once to build there, in a manner worthy of the greatest technical institution in the world.

"It appears then, that the question to be decided is whether it is better for the city of Cambridge to have Amherst Street open, or to have this site used as the location of the future buildings of

the Institute. The value of Amherst Street must be great indeed, if it can be considered seriously in comparison with the enormous advantages to be derived from the Institute's presence in Cambridge.

"As there are others who can speak more authoritatively from a Cambridge point of view, I need do little more than indicate briefly the character of some of the advantages to which I have referred. Speaking to an intelligent audience, I should put first as an advantage of inestimable value, the mere presence of such an institution in your midst. You have an opportunity of securing, not an unknown and untried school, but admittedly the greatest thing of its kind in existence, and surely it must mean much for the citizens of Cambridge to be better placed in the matter of technical education than any other city in the world. The school is one that gives boys training as an entrance to many practical professions and opens its doors to rich and poor alike. It may be interesting for you to know that of the Massachusetts students at present at the Institute, one-third of the whole are the sons of wage-earners. Such a school is for some poor boys the only avenue to real success in life, and it gives them an opportunity not only of bettering themselves but of contributing materially to the future wealth of the city and of the state. Apart from these advantages, unquestionably great, but hard to estimate in dollars and cents, the presence of the Institute here would enable Cambridge to benefit directly by the large sums of money spent by the Institute and its students. It is estimated that at least a million and a half dollars a year are spent in this way, and a large part of this would inevitably be added to the wealth of the city. This takes no account of the very large sums of money to be spent in the future on the buildings of the Institute. We propose within the next few years to spend at least two million dollars in buildings, and if this takes place in Cambridge, that city can not fail to profit largely by the expenditure. Apart, however, from such considerations, there are two very special reasons why Cambridge should welcome the Institute to this particular location. Unless the Institute comes here, that portion of the city will inevitably be doomed to the use of factories and garages—I say "doomed" not because factories and garages are a bad thing, but because they are comparatively cheap structures, adding little to the tax-list. The Institute's presence will save the situation, and inevitably improve the surrounding prop-

erty all along the river front, thereby bringing a rich harvest of taxes into the city treasury. Then, you must recognize that whole future of the Charles River Basin is wavering in the balance. Cambridge has paid a large share of the expense of improving that basin; if it has been improved merely for the sake of factories and garages, millions of money might as well been have thrown into the Basin. A unique opportunity of improving the city has been lost, and the approaches to Cambridge from the Boston side left permanently in a highly unsatisfactory condition.

"With such facts in mind, I do not think that you can take long to decide the relative advantages of the two courses that are open to you—to keep Amherst Street open, or to receive the Institute into your midst. Indeed, the advantages of possessing Technology are so enormous that you could only decide against it if you were hostile to the Institute and it goes without saying that the Institute has no intention of coming to Cambridge unless it is to be welcomed there, and I am glad to have much evidence that such a welcome is actually being extended to us. It is a simple fact that we should have not considered going to Cambridge at all had it not been for the petitions from individuals and societies in Cambridge urging us to go to this particular site. The Cambridge Club and the Economy Club in February and March last, invited us most cordially to locate on the land now being discussed, and pledged the Institute their hearty support. The Executive Committee of the Tax Payers Association expressed their belief 'that it would be for the best interests of the city to have the Institute of Technology occupying this land and are heartily in favor of this action. It is our belief that this will establish the north bank of the Charles River west of Massachusetts Avenue, as a residential section, thus bringing to Cambridge large amounts of additional taxable property.' The Citizens Trade Association extended a cordial and hearty invitation and pledged their earnest support. A large number of individuals representing all shades of political and social interests asked for our favorable consideration of Cambridge as a site for the Institute. The Mayor of the city assured us that he regarded such an institution as a blessing and not a burden upon the community, and that he would welcome the Institute should it decide to cross the river. The city of Cambridge passed an order in both branches of the city council to the following effect: 'In consideration of the manifest

change in the character of the development that is gradually and surely creeping along the river front, which is destined to change this section from the very valuable residential possibilities that it was originally designed, and which means a very serious loss to the city in taxable valuation, be it:

"'ORDERED:—That the city Council of the City of Cambridge wishes to record its approval of the movement to induce the Massachusetts Institute of Technology to locate on the land, now vacant, extending along the northeasterly side of Massachusetts Avenue between the Boston and Albany Railroad tracks and the river front.'"

Resignation of Professor Schwamb

Announcement was made at the opening of the term that Professor Peter Schwamb, '78, had resigned as professor of machine design and director of the mechanical laboratories at the Institute, who has been on the instructing staff of the Institute for 28 years. The mechanical laboratories have now been incorporated as a sub-department of the mechanical engineering department, and Professor Park has been appointed supervising director. A sketch of Professor Schwamb will be given in the January number of the TECHNOLOGY REVIEW.

English for Foreign Students

Foreigners who come to the Institute usually have an equivalent to the second year English course already in their own languages, but are weak in their everyday English. For these reasons the Faculty has decided that it would be an injustice to exact of these men the same requirements as of native students, and accordingly a special course, or rather individual courses, are given them according to their needs, being about the equivalent of what the student gets of French or German. There are fourteen men in this section, of which Instructor Sidney Gunn has charge, several of them are from China and others from Portuguese or Spanish South America.

MAYOR OF CAMBRIDGE FAVORS

Points out the advantages that would come to that City if the Institute should locate there—A solution of the river-front problem

Mayor Barry of Cambridge, in a statement bringing out many advantages which would accrue to Cambridge from the establishment of Technology there, declared that the question of discontinuing Amherst street should not prevent the city from securing the institution.

"The question of the discontinuance of Amherst street as a public way in the city of Cambridge," he said, "appears at present to be the only thing standing in the way of the locating of this great institution in our city. This is rightly objected to by certain well established manufacturing concerns already located in this vicinity, but these manufacturers are reasonable in their objections, and I feel certain that the city council in its wisdom will devise and lay out some other plan of traffic which will be acceptable.

"The coming of the Massachusetts Institute of Technology to the city of Cambridge will be of great advantage to our city, renowned as it is all through the civilized world as being the foremost seat of learning in this country.

"The location of this, one of the greatest scientific schools in the world, on the borders of the beautiful Charles River Basin and so convenient to the great city of Boston, will, I feel very certain, be the means of the development of the entire section west of Massachusetts avenue as a high-class residential district, thereby greatly adding to our assessed valuation.

"I am very certain, too, that the location of the Institute in our midst will be of untold advantage and benefit to the manufacturers of Cambridge, as well as to all departments of the city requiring expert scientific information, as I understand that the Institute is always ready and willing to coöperate in matters of scientific and public interest.

"The advantages to the young men of Cambridge seeking tech-

nical training cannot be estimated fully until the institution itself is located here."

In an editorial November 15, the *Boston Transcript* said:—

"In his statement at Cambridge last evening, regarding the matter of the new site for the Massachusetts Institute of Technology Dr. Maclaurin very cleverly put out of the question the objection to the non-assessment of taxes, because any educational or religious institution, under the present laws, can purchase land in Cambridge and the Cambridge authorities can have nothing to say as to whether such land should be taxed or not, so that all the arguments along the line of injury from non-assessable property are done away with in a single sentence. The point reduces itself plainly to the question: Is Amherst street more valuable to Cambridge than the Institute of Technology? And when it is considered that Dr. Maclaurin's estimate of a million and a half expenditure a year is an exceedingly conservative one and hardly allows for the money dispensed by the instructing staff of two hundred, it will be seen what a very large direct financial benefit an institution of the kind will be to the city in which it locates. The waterfront of Cambridge ought to be a desirable place for residences, but any improvement to that end thus far has failed to manifest itself. The establishment of an architectural group of buildings such as Technology is capable of placing there can hardly fail to work great improvement in the character of the surrounding property and thus add to the actual value of the city."

Goes to Observe Jupiter

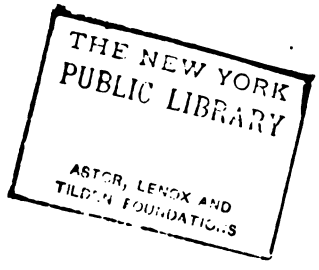
Professor William H. Pickering, '79, of the Harvard Observatory sailed this month for Jamaica, where he expects to remain for a year in connection with astronomical work for Harvard College. Professor Pickering took with him an eleven-inch telescope and photographic apparatus. The particular object of his trip is to observe the satellites of Jupiter. In the tropics the atmosphere is clearer and the air steadier for observations, and for that reason Jamaica was selected. Contemporaneously with the work of Professor Pickering, Professor Douglass of Tucson University in Arizona is making a series of observations.

CHANGE IN CIVIL ENGINEERING DEPARTMENT

Announcement has recently been made by President Maclaurin of the appointment of Professor Charles M. Spofford, '93, to be the head of the department of civil and sanitary engineering at the Institute. At the time Professor Swain left the department to accept a similar position at Harvard University, the administration of the department was divided between Professor Allen who represented it in its relation to the Corporation, Professor Spofford who was the representative on the Faculty, and Professor Porter who was in charge of sanitary engineering. The change recently announced was made at the request of Professor Allen, senior in the department, who desired to be relieved of his portion of the executive duties. There will be no change in the courses resulting from this appointment.

Professor Spofford is a Massachusetts man, born in Georgetown, who was graduated from the Institute in 1893 with the degree S. B., taking a post-graduate course the next year. For some time thereafter he was with the Phenix Bridge Company as draughtsman, returning to Technology as assistant in the department of civil engineering in 1896, with six years as instructor and two as assistant professor. He was then called to the chair of civil engineering at the Brooklyn Polytechnic Institute, where he remained till Professor Swain went to Harvard, whereupon he returned to Technology as Hayward professor of civil engineering.

Professor C. Frank Allen, who has asked to be relieved of responsibility, is also a Tech graduate, having his S. B. from the Institute in 1872. He was engaged in legal business for a time, but has been a member of the instructing staff since 1887, having been assistant professor for two years, associate professor for the succeeding seven years and full professor since 1896, his specialty being railroad engineering. He has had important practical experience with the Santa Fé Railroad. He was president of the Boston Society of Civil Engineers in 1899, of the Massachusetts Highway Association and of the New England Railway Club in 1906.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Building now being erected for the Summer School of Civil Engineering at East Machias, Maine. The alumni, aided by the advice of the members of the Faculty, initiated the movement for the summer school, made the selection and purchase of the site with the approval of the Corporation, have financed the undertaking, and are supervising the building and equipping of the camp; a splendid example of the practical help the Institute is receiving from an efficiently organized body of alumni. The committee on summer school camp, consists of Leonard Metcalf, '92, chairman, F. H. Fay, '93, A. F. Bemis, '93.

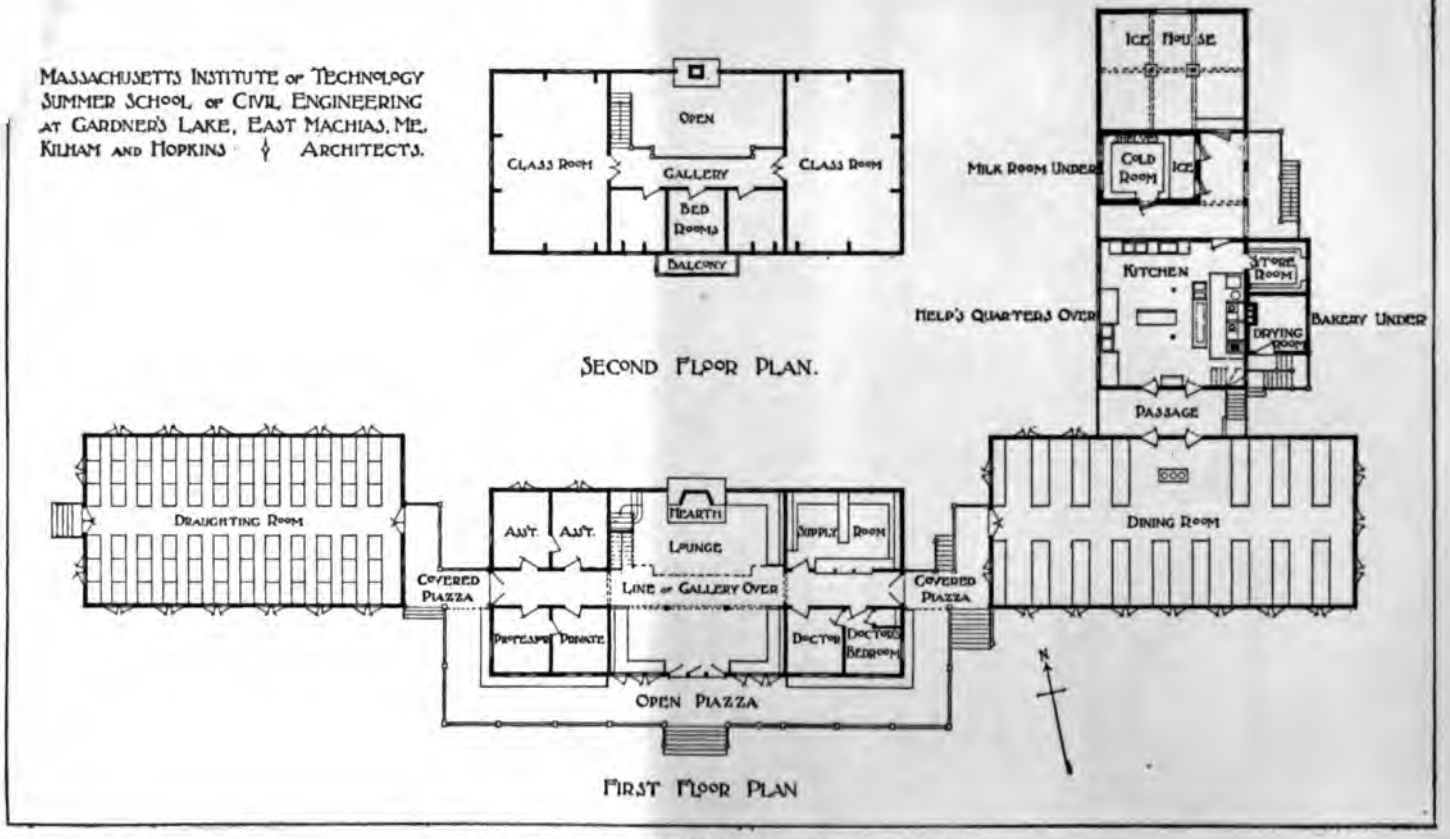
OUR BEAUTIFUL SUMMER SCHOOL CAMP

Description of Buildings which will be ready for occupancy by students next Summer—Facilities and equipment to be unexcelled—Another instance of Alumni initiative and enterprise

Ground has been broken for the construction of the main buildings of the Technology Summer School Camp of Civil Engineering at Gardner Lake, near East Machias, Maine, and early in August of next year, the Institute will offer to the students in civil engineering a practical course in field engineering in a camp unexcelled in natural facilities and in equipment, where the work will be carried on under conditions which will be ideal for the promotion of the health and good fellowship of the students. The camp completely equipped, and embodying the latest ideas in camp construction, is provided through the generosity of two alumni; one, who prefers to remain unknown, having purchased the land and generously offered to equip the camp, while the other, Charles W. Eaton, '85, has contributed $10,000, toward the construction of the buildings.

A description of the beautiful site selected and of the steps leading to the establishment of a permanent summer school of engineering appeared in the July number of the REVIEW. For those who have not seen that article it may be explained that the site consists of a tract of land, over 700 acres in extent, having a shore frontage of three miles on one of Maine's most beautiful lakes. The land, somewhat rolling, and containing both wooded and open country, is well adapted to practical instruction in surveying, and as the country outside of the camp is sparsely settled, it will afford opportunity for carrying railroad and other surveys beyond the limits of the Technology site.

Gardner Lake, about eight miles long, with a very irregular shore line probably twenty-five miles in extent is of value not only for surveying purposes, but also for the opportunities it offers for boating, bathing and fishing. Stream measurements will be carried on in the stream which drains the lake, and tidal observations can be made as the ocean is but three or four miles away.



PLAN OF THE SUMMER] SCHOOL] BUILDINGS

During the past summer, Kilham & Hopkins, the architects selected for the summer school, have prepared the final plans for the main buildings, and in the early fall a contract for their construction was let to A. R. Gilson of Machias. Work was begun at once, and it is expected that before it will be suspended for the winter, the concrete foundations will be in place, and the ice house finished to store this winter's ice crop in readiness for next summer's camp.

The main buildings are to be three in number, set upon a bluff or plateau, known as Crosby Point, at an elevation about seventy-five feet above the lake and one hundred and forty feet above sea level. The group will have a frontage of two hundred and twenty-two feet, and an extreme depth at the east wing of one hundred and fifteen feet. The buildings face to the south and are in a commanding position where they may be seen for miles, and from which an extended view of the surrounding country is to be had.

The buildings are to be of wood, the outer walls being made of partially rounded timbers to suggest log cabin construction. The roofs are to be covered with asbestos shingles (invented by Professor C. L. Norton, '93) as protection against fire, although the land round about will be cleared of trees to such an extent that the fire risk will be a very small one. The buildings are arranged in irregular line with the roofs at different elevations giving a pleasing diversity in appearance.

The central administration building, the dominant feature of the group is to be seventy-two feet by thirty-one feet in size, two stories in height, and set a few feet above the ground. On entering this building one will cross the broad open piazza, ninety feet in length along the front, and will come immediately into the lounge or living room, about thirty feet square, around the walls of which are seats and book shelves. On the further wall, opposite the entrance, will be seen a massive stone chimney with a fire-place large enough to take four-foot logs. The chimney will be fitted with a heavy oak mantelpiece supported by stone brackets, and its broad front will afford room for the Tech seal and emblems. At the front of the building this lounge or living room is one story in height, but at the rear the room rises past the second floor gallery up to the height of the roof. In leisure hours this lounge will be a cheery and comfortable meeting place for teachers and students alike.

To the left of the lounge are four small rooms, to be used as offices by the professor in charge of the camp and his assistants. At the right, on the front of the building, there are two rooms for the use of the camp physician, and to the rear of these is the supply room, which will be also a sort of country store and post office.

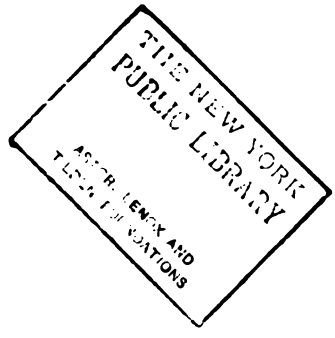
On ascending the stairway at one corner of the living room, we find on the second floor two classrooms, one at each end of the building, each twenty-one by thirty feet in size, and lighted by large dormer windows. In front are three small rooms which may be used as bedrooms, recitation rooms or offices. The rooms of the second floor are connected by a gallery overlooking the fire-place and the rear of the lounge.

The entire west wing, which is connected with the administration building by a covered passageway, is fifty-six feet by thirty feet in area and one story in height, and is to be used as a drafting room. It will have drawing tables to accommodate seventy-two men. It is high studded and well lighted by windows on all four sides and by large dormer windows, with northern exposure, in the roof.

The east wing, which is shaped something like a T square, with the head facing the lake, will contain a dining room, kitchen, ice house, servants' quarters, etc. The dining room, which is reached by a short covered passage from the administration building is sixty-four feet by thirty feet in size, one story in height, with tables seating 168 persons. Like the drafting room, it is open to the rafters, and is well lighted by windows on all sides, although there are no dormer windows in the roof. In fair weather with all the windows open the room will be so light and airy that the effect will be much like dining out of doors.

To the rear of the dining room, and separated from it by a passage eight feet in width, is the kitchen, fully equipped with ovens, broilers, cook's table, steam table, dish washer, vegetable and pot sinks, etc. Opening out of the kitchen is the store room, and in the basement below is to be found the bakery. To the rear of the kitchen and separated from it by another open passage are the cold room for the storage of meats, etc., and the ice house which will be large enough to hold an abundant supply of ice cut from the lake. In the basement beneath the cold room is a room for the storage of milk.

The servants are to be quartered over the kitchen, and on the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SOCIAL ROOM AT THE SUMMER SCHOOL.

first floor alongside the kitchen chimney is the drying room where students who may be drenched while surveying in wet weather will have an opportunity of drying their wet clothing. In the basement of the east wing are located also the toilet rooms, and a large instrument room where the instruments may be kept in the summer and where much of the camp equipment may be stored during the winter.

In the main buildings will be provided sleeping quarters for the camp physician, the kitchen force, and possibly for two or three members of the teaching staff. The students and most of the instructors, however, will be quartered in tents, placed in a curve on the crest of the bluff to the east of the main buildings. Each tent will have a wooden floor and will probably be 10 by 12 feet in size, accommodating two men, although 14 by 17 foot tents, for four men, are under consideration.

On the shore of the lake, at a point considerably removed from the bathing beach, will be located a pumping station, where water of excellent quality, obtained from wells near the shore, will be pumped to a tank, which will supply the camp with running water, a luxury that will be appreciated by alumni who have recollections of lugging water at past summer school camps. The gasoline engines which operate the pumps will probably be used at night to generate electricity for lighting the whole camp.

A drainage system, embodying some of the latest ideas in sanitary science is being planned by Leonard Metcalf, '92, chairman of the alumni committee on the summer school; this will afford an opportunity for some experimental work by students in the sanitary engineering course. A boat house, wharf, and a number of gasoline launches and other boats, will complete the equipment of the camp.

The summer school camp is an example of the practical help which the Institute may expect from the efficiently organized body of alumni, when the great problem of moving the institution to a new site is taken up. In this instance the Technology Corporation has been asked simply to give its official sanction to the project; the alumni, aided by the advice of members of the Faculty, have initiated the movement for the summer school, have thoroughly investigated site possibilities and made the selection and purchase of the site, have financed the undertaking and are supervising the building and equipment of the camp.

In years to come Tech men will acknowledge with gratitude their debt to the two alumni, who have generously given the funds necessary to provide the Institute with a summer school camp, admirably fitted to meet the social and technical needs of the students in civil engineering, who for two months in the summer vacation, following their second year, will gain health and experience and will form friendships, which in many instances will last through life.

FREDERIC H. FAY, '93.

Major Cole Comes to Tech

Maj. Edwin T. Cole, U. S. A., has been appointed instructor in military science at the Institute this year. Major Cole comes to the Institute particularly well equipped for his new field. He was graduated from West Point in 1889 and for two years has been the head of the engineering department at the army college at Fort Leavenworth. He has given special study to topography and his efforts have resulted in giving more attention to road position and outpost sketching throughout the army. He has made many original contributions to the arts of topography and phototopography. Previously to entering West Point Major Cole was associated with the engineering work of the Philadelphia and Reading Coal & Iron Co.

Professor Chandler Retires

Professor Francis W. Chandler who has been head of the architectural department of the Institute for twenty-three years has tendered his resignation on account of increasing deafness. Professor and Mrs. Chandler will make an extended tour of Europe this winter. Probably no Institute professor is better loved than Professor Chandler and the news of his retirement will be read with much regret especially by the former students of the architectural department. It is understood that he desired to make this change two or three years ago but was persuaded from taking this step until this time. Professor Chandler will be the subject of a sketch in the January TECHNOLOGY REVIEW.

NOMINEES OF ALUMNI ASSOCIATION

Alumni Council announces Nomination of Officers for the Association and for Term Members of the Corporation—Ballots soon to go out

The nominating committee of the Alumni Association has made the following nominations for officers of the association: for president, James W. Rollins, '78; vice-president, Leonard Metcalf, '92; secretary-treasurer, Walter Humphreys, '97; executive committee for two years, George B. Glidden, '93, and Lawrence Allen, '07; members at large on the Council for two years, Charles F. Lawton, '77, John L. Shortall, '87, Spaulding Bartlett, '90, E. Laurence Hurd, '95, Ingersoll Bowditch, '00.

There are six names presented for term membership on the Corporation of which three will be selected by ballot. The nominees are Louis A. Ferguson, '88, Chicago; Eugene C. Hultman, '96, Boston; Arthur D. Little, '85, Boston; Russell B. Lowe, '02; Fitchburg; J. Waldo Smith, '87, New York City and Eben S. Stevens, '68, Boston. Sketches of the nominees given by the nominating committee are as follows:

Louis A. Ferguson, '88. Graduate in electrical engineering. Second vice-president of the Commonwealth Edison Company and president of the Minerallac Electric Company and the Walker Vehicle Company of Chicago.

On leaving the Institute joined the staff of the Chicago Edison Company as engineer of the underground department and was promoted assistant electrical engineer of the construction department in 1889 and electrical engineer of the company in 1890. Became general superintendent of the company in 1897 and of the Commonwealth Electric Company until his appointment as second vice-president of both companies in 1902.

Is at present second vice-president of the Commonwealth Edison Company (the consolidation of the Chicago Edison and Commonwealth Edison Companies), president of the Minerallac Electric Company, the Walker Vehicle Company, director of the North

Shore Electric Company, and of the Illinois Gas and Electric Company. Mr. Ferguson has done much notable work in central station practice. Appointed in 1895 on staff of lecturers at the University of Wisconsin.

President Northwestern Alumni Association of Massachusetts Institute of Technology, 1898–9, National Electric Light Association, 1902–3, Association of Edison Illuminating Companies, 1901–3, American Institute of Electrical Engineers, 1908–9. Member of Commercial Club, Union League Club, Chicago Athletic Club, Mid-Day Club, University Club, Onwentsia Club, Glen View Club, also Engineers' Club of New York.

Eugene C. Hultman, '96. Graduate in civil engineering. Engineer for the board of directors of the West End Street Railway Company, Boston, Mass.

From '96 to '97 scientific field assistant United States Geological Survey. From '97 to '98 assistant engineer West End Street Railway Company and Boston Elevated Railway Company. From '97 to '99 assistant chief engineer Barbour Stockwell Company, iron founders and machinists, Cambridgeport, Mass. Since 1899 has been engineer for the board of directors of the West End Street Railway Company, as well as from 1900 to 1904 occupying the position of engineer for the board of directors for the Fitchburg Railroad, besides serving on various arbitral boards and grade crossing matters; member also of the Massachusetts House of Representatives in 1906, '07, '08, and of the Massachusetts Senate in 1909 and '10. Member of executive committee of the Alumni Association, and member of the State Aid Committee, 1911.

Arthur D. Little, '85. Special student in chemistry. Chemist and chemical engineer.

Chemist and superintendent Sulphite Fiber Mill, Richmond Paper Co., 1884–85; engaged in starting sulphite plants in North Carolina and Wisconsin, 1885–6; state assayer, 1887–95; in private practice in Boston as chemist and engineer, 1887–1910; now president Chemical Products Co., director Fort Hill Chemical Co., Standard Alcohol Co., president and manager Arthur D. Little, Inc., chemists and engineers for many large public service and manufacturing corporations.

Author (with R. B. Griffin) "Chemistry of Paper Making."

Director American Chemical Society, past chairman Division

of Industrial Chemists and Chemical Engineers; member Executive Committee Eighth International Congress Applied Chemistry, president Section of Cellulose, Starch, Paper. Member American Gas Institute; Society of Chemical Industry; American Institute Chemical Engineers, etc. Fellow American Association for Advancement of Science.

Chairman Publication Committee of the TECHNOLOGY REVIEW for the first few years of its existence. Initiator of recent Congress of Technology.

Russell B. Lowe, '02. Graduate general science. Cotton manufacturer, Fitchburg, Mass.

President Parkhill Manufacturing Company, director Lancaster Mills, Clinton, Mass., director Fitchburg Safe Deposit & Trust Company, director National Association of Cotton Manufacturers, director, Nashua River Reservoir Company, president Fitchburg Society for the Prevention of Tuberculosis.

J. Waldo Smith, '87. Graduate in civil engineering. Chief engineer of the Board of Water Supply of the city of New York.

After graduation was employed with The Holyoke Water Power Company until 1890, when he went with the East Jersey Water Company and was occupied on the development of the water supply for Jersey City and Newark, and the operation of the water works of Paterson, Passaic, and Montclair.

In 1900 he became chief engineer of the East Jersey Water Company and under his direction the water purification plant at Little Falls was constructed.

In 1903 was appointed chief engineer of the Aqueduct Commissioners of New York City and under his direction the new Croton dam was completed, progress was continued on the Jerome Park Reservoir and the Cross River dam was begun.

In 1905 was appointed chief engineer of the Board of Water Supply of the city of New York for the development of an additional supply of water from the Catskill region. Has continued on this work up to the present time. This work involves an estimated expenditure of $176,000,000; has a total length line of about 120 miles and the construction of a number of large reservoirs.

Mr. Smith is a past director of the American Society of Civil Engineers, member of the American Society of Mechanical

Engineers, Century Association, New York Engineers' Club, Technology Club, New England Society of the city of New York, Hamilton Club of Paterson, Chamber of Commerce, State of New York, New England Water Works Association, American Water Works Association.

Eben S. Stevens, '68. Special student from 1865–67. Retired.

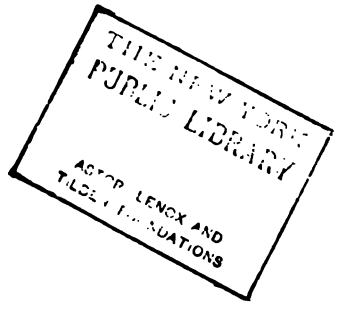
Was president and treasurer of the Intervale Mills Corporation, Massachusetts senator from 1892–3; served as expert in Kettle Brook & Blackstone River cases for the city of Worcester. Also in the same capacity for the metropolitan commission. For the past two years has been president of the Connecticut Valley Alumni Association. Has served on numerous public boards and corporations. Mr. Stevens gave valuable assistance to the committee on Legislative work in the campaign for state aid.

Mr. Stevens served as term member on the Corporation from January, 1906, to January, 1909, and is eligible to the Corporation as alumni term member, as his original term of service expired more than one year ago.

Tech Men identified with Vocational Magazine

Among the members of the editoral staff and advisory board of *Vocational Engineering*, a new bi-monthly magazine published in the interests of vocational education, are Arthur B. Dean, '95, chief of the division of vocational education, State Vocation Department, Albany, N. Y., William E. Roberts, '92, supervisor of manual training, Cleveland, Ohio, James P. Munroe, '82, president of the National Society for the Promotion of Industrial Education, Charles R. Richards, '85, director of Cooper Union, New York City, and Arthur L. Williston, principal of the Wentworth Institute, Boston.

The area of the site selected for the Institute is a little less than the area of Boston Common. Boston Common has an area of forty-eight acres and the Cambridge tract has an area of forty-six acres. It will thus be seen that the Institute will have all the land necessary for expansion for a long period to come.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THE TECHNOLOGY STATION AT KILAUEA

THE LAVA LAKE AND ISLAND

As seen from the Station July 17, 1911

THE TECHNOLOGY STATION IN HAWAII

Observations being made there by Mr. Frank A. Perret, representing the Institute, in conjunction with the Carnegie Institution and the United States Weather Bureau

In 1906, after the San Francisco earthquake and the eruption of Vesuvius, the department of geology began systematically to seek money for the establishment of a geophysical station as a branch of the Institute's activities. Mr. Charles A. Stone, a trustee of the estate of Edward and Caroline Whitney, secured from that estate money wherewith to purchase in Germany a seismograph. In 1907 Professor Jaggar conducted an expedition from Technology to the Aleutian Islands, this being supported by generous subscribers in Boston and elsewhere. The journal of this expedition was published in the REVIEW in January, 1908. In December of that year came the frightful earthquake at Messina, and Mr. Frank A. Perret, then working on Vesuvius, was immediately sent to the scene of the disaster, aided by funds from friends of the Institute, and from the Volcanic Research Society of Springfield. This society of business men had been organized by his friends to support Mr. Perret's work in Italy. From that time to the present, the Institute and the Springfield society have both assisted Mr. Perret, and his work has been extended to Etna, the Canary Islands and Hawaii. The Brooklyn Institute also claims him as one of her sons.

In 1909 Professors Daly and Jaggar went to Hawaii and studied the active volcanoes there. The people of Honolulu, through its Chamber of Commerce and the Bishop Museum, undertook to raise an annual fund for five years, conditional upon Technology's acceptance of the task of building and manning a volcanological observatory. In July, 1909, the Whitney estate provided an endowment fund of $25,000 for research in geophysics, and especially for work which might ultimately lead to the protection of life and property in connection with volcanoes and earthquakes. Plans for establishing a Hawaiian station have, since 1909, been

slowly developing. Professor Daly has published two papers dealing with his work there. In 1910 the geophysical laboratory of the Carnegie Institution of Washington prepared special thermometric apparatus at the request of our department of geology. Other instruments, mostly seismographs, were secured in Japan, and the United States Weather Bureau furnished a set of meteorological instruments.

In 1911 the income of the Whitney fund, along with some other gifts from individuals, first became available for use in the field, and the Institute established a temporary station at Kilauea with Mr. Perret in charge. Professor Jaggar, aided by Institute engineers, designed and had built a cableway for spanning the crater and lowering instruments. From July 2, 1911, to the present time, Mr. Perret has been directing the work of this station and during July and August he was accompanied by Dr. E. S. Shepherd of the Carnegie Institution. Dr. A. L. Day, director of the Carnegie Geophysical Laboratory, cordially coöperated with us in this work. The Volcanic Research Society of Springfield loaned the services of Mr. Perret to the Institute, and continued his stipend. He expects to return to Italy, probably by way of the Orient, during the coming winter. Since August 18, regular reports have been made by the "Technology Station," and these have been published in Honolulu for the benefit of the people of the Islands. They will be compiled in a scientific memoir by Mr. Perret.

The expedition left for Honolulu June 29 and proceeded to the Island of Maui where the great crater of Haleakala was visited, and two days later the party proceeded to Hilo and to the volcano. Arrangements were made for accommodations at the Volcano House, and a light frame building with galvanized iron roof was started on the edge of the inner pit of Kilauea. The lake of lava, with a diameter of one hundred and fifty meters and some eighty-five meters below the edge of the pit, was found to be slowly rising. Immersed in the boiling melt was a floating island, consisting of two parts joined by a low isthmus under which there was a cavity into which the surface lava of the lake was pouring in cascades from either side. From day to day, the island and the shores of the lake changed and provision was made to photograph these changes with a view to securing, for a limited period at least, a complete record of the streaming mechanism of such molten rock.

In one portion of the lava pool there is a great fountain which boils up every few seconds, and this has been known for years as "Old Faithful." There were flames of burning gas which appeared amid spatter cones and in high vents on the wall of the crater, sometimes accompanied with little spurts of lava from elevations considerably above the main level of the pool. At intervals the rising lake overflowed its banks forming flows.

"Many observations," wrote Mr. Perret, "both visual and photographic were initiated for a systematic study of the various phenomena of the lava lake, the flames, the circulation of the lava, the formation of grottoes, the mechanism of the lava fountains, etc. In the latter, four principal phases were distinguished, and have been photographed by day and by night, the special telephoto camera being found invaluable for this work. On July 8th sites were selected for the cable anchorages and for the observation station, and work was begun on stretching the cables on the 11th. On first trial the smaller cable broke and fell into the lake, and the end, on being pulled up, was found to be converted into iron sulphide. This boded ill for the electric thermometer, which was successfully immersed in the lake July 20, but which failed to connect electrically with the recording instrument on the shore. During the four minutes of immersion the three protecting tubes of iron, nickel and quartz were completely dissolved, although the melting point of each is far above the temperature of the lava. The result is due to the high chemical activity of the lava from the presence of sulphur, etc., and this was not wholly foreseen in the designing of these instruments.

"The second thermometer also failed under test, and finally a third instrument was prepared by Doctor Shepherd, and was successfully immersed July 31. This consisted of a thermoelectric couple with a large water-jacketed cold end, and this also was lost, but not before a satisfactory reading had been obtained, which gave 1010° centigrade (1850° F.) as the temperature of the lava in the lake from one to three feet below the surface. By means of the cable an iron pot was lowered for an instant into the 'Old Faithful' fountain, and a quantity of fresh lava obtained for analysis."

Mr. Perret further reported that about July 28 a large gas vent under the east black ledge became very troublesome, preventing a sight of the lake from the operating end of the cable, and neces-

sitating a line of signal men around the crater. After August 6 the vapors from this vent developed so much free acid that the zinc coating of the galvanized iron roof of the station was consumed. On the 22d of July the lake level began to sink, sublimations began forming around the banks and the lowest level was reached August 7; then the lake began to rise, culminating at the time of full moon on August 9, after rising nineteen feet. It fell again after the 10th of August. There were heavy avalanches from the banks and from the interior of the crater during periods of falling of the lake. The lake became, therefore, much enlarged. The floating island steadily sank, and its progress was photographed daily.

On July 25 at 10.32 a. m., a shock of the third to fourth magnitude (Mercalli's scale) was felt at the station, and two distinct shocks were felt at the Volcano House August 7.

The station was completed on July 23 and immediately occupied. A correspondent in Hawaii wrote to Professor Jaggar as follows: "I was at the volcano last week and had several interviews with Mr. Perret. He is certainly an enthusiastic as well as a keenly intelligent worker. It is impossible to get him away from the little building he has erected at the brink of Kilauea. He is there night and day, and from what I can gather, is so interested in gathering information concerning Pelé's doings that he gets scarcely any sleep."

"Pelé" is, curiously enough, the name of the Hawaiian fire goddess, and the word is in no way connected with the name of the famous Martinique volcano.

The station is on the eastern brink of the crater. Its equipment consists of a Zeiss telemeter, a portable transit, Zeiss telephoto camera, other cameras, thermograph, barograph, thermometers, anemometer, pyrometers, field glass, seismoscope and microphones. The seismoscope is one designed by Perret and is set up for visual observation at intervals, showing the ground to be continually in movement. The rise of every fountain of lava is clearly shown by the indicator. Mr. Perret has adopted an arbitrary decimal scale by which the average seismicity is recorded, the normal being five. This is indicated by a slow continuous movement with sharp quivers every fifteen to twenty seconds. Stronger movements would be rated as six, a quieter condition by four, etc. The seismoscope also shows

strong tiltings of the ground in a north-south direction, sometimes southward and sometimes northward.

Mr. Perret's devotion to the work has stirred the enthusiasm of the people of Honolulu. Dr. William T. Brigham, director of the Bishop Museum, visited the Technology station, and at once secured a gift of money for Mr. Perret's work. President Gilmore, of the College of Hawaii, is keenly interested, and a movement is now on foot for forming a permanent association with headquarters in Honolulu, to build and maintain a permanent observatory which may, perhaps, be partly financed with Federal funds under the grants apportioned to the College of Hawaii. A national park has been proposed for the Kilauea district, and if such a reservation is provided for by Congress, it may be possible in the near future to establish a permanent scientific station properly equipped, and in charge of trained observers. If the Institute of Technology should succeed in bringing this about, it will have the honor of establishing the first volcano observatory on American soil.

On October 5, 1911, a step in the direction of establishing a permanent observatory on Hawaii was taken at a luncheon in the University Club of Honolulu. Hon. L. A. Thurston presented the subject, and addresses were made by Governor Frear; Pres. J. W. Gilmore of the College of Hawaii; Mr. J. A. Kennedy, president of the Inter-island Steamship Company; Mr. Clarence Cooke, president of the Bank of Hawaii; Mr. A. F. Judd, trustee of the Bishop Museum; Mr. T. Clive Davies, M. I. T., 1894, and a number of other prominent citizens of Honolulu. All expressed great interest in organizing permanent study of the volcanoes, and a committee was appointed to prepare plans for forming an association which should deal with the matter. The committee selected consists of Messrs. Thurston, Judd, Gilmore, Cooke and Kennedy. This committee raised $1500 at once for temporary purposes and will take under advisement the question as to whether the association formed shall be independent and local, or associated with such a scientific institution as Technology. On a motion by Governor Frear, governor of the Territory of Hawaii and formerly chief justice, it was voted, "that it is the sense of this assemblage that there should be an observatory established at Kilauea."

The useful results which will come from such work as this, may best be indicated by comparing a volcano station to an astronomi-

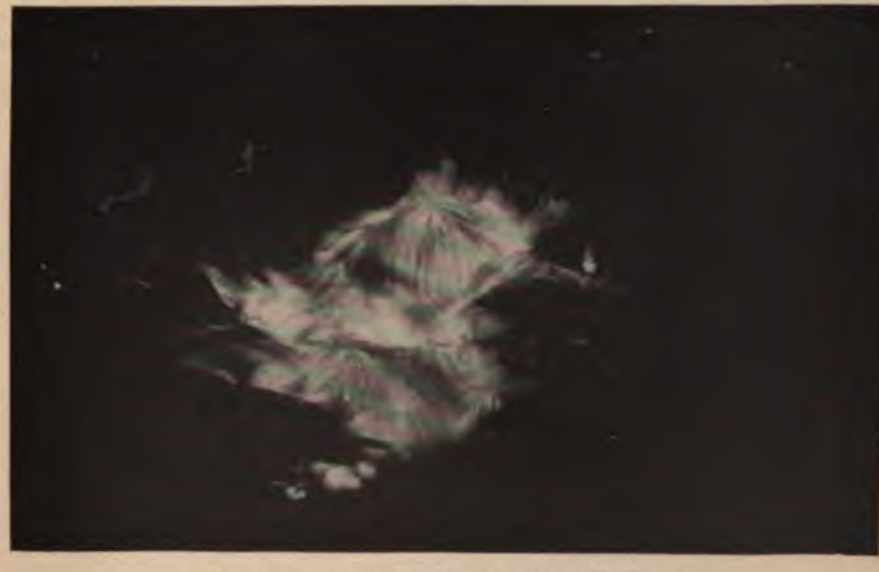
cal observatory, or to one of the stations of the Weather Bureau, the Hydrographic Office, or the department of terrestrial magnetism of the Carnegie Institution. These establishments record and measure movements of the heavenly bodies, movements of the atmosphere, movements of the hydrosphere, changes in the earth's magnetism. There remains in the service of humanity the lithosphere, or rocky shell of the earth, and its vast enclosed mass of heavy matter. We live upon it, are subject to its fluctuations, and greatly need more knowledge of its moods, both for avoiding disaster and for utilizing its forces.

At Kilauea on a mid-Pacific island there is a great vertical shaft open, leading into the earth's interior, and containing a mobile fluid which rises and falls and emits gases. It rarely explodes disastrously, and so is a suitable place for scientific work. About its borders, earthquakes, small and great, occur, related to it as a center. Here, if anywhere on earth, may be learned much concerning such problems as the nature of the under earth, the origin of ore deposits, the cause of earthquakes, the origin of the atmosphere, the effect of sun and moon on the earth's crust and the primitive manifestations of the earth's magnetism and gravity. A French man of science has suggested the digging of a deep shaft far into the earth for scientific purposes at an enormous expense; it seems better worth while to spend the money at such shafts as Kilauea which are already dug for us to unknown depths, and exhibit the most fundamental movements of the earth we live upon.

The following quotation from Doctor Shepherd's report to the director of the Geophysical Laboratory in Washington shows something of the adventurous nature of these experiments:

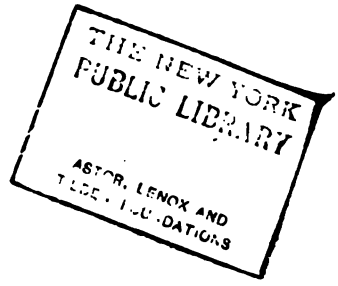
"Perret had been pitched out of an auto onto his head two days before, and could not help further than to climb down on the ledge and watch the thermometer. We were short of help that day, there being only Thurston, Emery, Ferris and myself available. But Thurston agreed that, with the sulphuric acid and steam rapidly destroying the anchorage of the main cable, it was then or never, so he impressed Mrs. Thurston, Miss Thurston, and Laurin Thurston into service.

"The smoke was very bad, so that we could see neither the lake nor the reel on the east side, and signals had to be waved around the rim. Finally the thermometer was over the lake. I took



THE LAVA FOUNTAIN "OLD FAITHFUL"

Telephoto Pictures by F. A. Perret, made at midnight, July 23, 1911. Distance 180 metres, focus objective 80 cm., Zeiss Apparatus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up my position at the galvanometer and refused to look away from it, for previous attempts had demonstrated that we might get a reading for only a second. Mr. Thurston handled the reel for lowering the thermometer, Mrs. Thurston held the cable tight on the drum. This placed Mr. and Mrs. Thurston directly under the main cable. In view of the probably weakened anchorage and the sudden and violent jerks to which this cable was subject while the thermometer was in the lava, I felt much relieved when the experiment was ended and the last thermometer gone for good. Laurin shifted coils and Miss Thurston established herself with a flag on top of the station. This last was a decidedly uncomfortable place, as the sulphur dioxide was pouring up around her and the rain and mist drenching her. Perret went down on the north ledge and we depended on signals waved by him to Miss Thurston and repeated by her to us.

"The element struck the lava at 1.35 p. m., the galvanometer rose steadily to 910° C., and remained stationary a minute. Perret signaled to pull up. He afterward reported that an immersion of two to three feet had been perfect and that steam was issuing from the water pot which served to fix the temperature of the 'cold junction.'

"We then lowered the element once more, but only to have a fountain burst out just under it. The hot lava was thrown over the leads cable, weakening it, and the downrush of crust and lava snapped the thermometer from the leads and Pelé swallowed it. I regret that only one reading was possible, but I have every confidence that it was a good reading. Everything worked just as it should, and, barring the loss of the instrument, there is no criticism of the result to be made. The corrected reading two feet below the surface of the middle of the lake therefore falls at 1000° within the limits of error which can be attained in a field measurement under such difficult conditions (perhaps 25°)."

T. A. JAGGAR, JR.

Professor Lanza and his work at the Institute

In the January REVIEW, Mr. James P. Tolman, '68, chairman of the Corporation committee on the mechanical engineering department will contribute an appreciation of Professor Lanza's work at the Institute with a sketch of his life and his important contributions to the profession.

MECHANICAL ENGINEERING DEPARTMENT PLANS

New Courses in Refrigeration and Gas Engineering Begun—Course in Industrial Management to be Given by Prof. Park—Several Important Changes in Scheme of Instruction.

The department has undergone a number of changes during the past summer. Two members who have served longest on the Faculty, Professor Lanza and Professor Schwamb, have given up active work in the department. This has made necessary a rearrangement of the work among the rest of the teaching staff, as no new appointments have been made to fill these vacancies.

The members of the department believe that some few changes can be made in the distribution of time between the different subjects to the betterment of the course, and that the technical and the theoretical work should be increased even at the expense of the manual work. Our students would profit by a longer course in hydraulics; by more work in electrical subjects; by a more complete course in refrigeration; by additional work on the small gas engine; an additional drill in the use of mathematics, and by a course in scientific German of sufficient length to make it possible for them to read articles appearing in German periodicals. The course in foundry work has been greatly developed during the past year through the energy of the instructor, Mr. O'Neill. On account of the importance to the designer, of this branch of mechanic arts, more time should be given to it.

Although it may not be possible to get all of the above into the course it is hoped that by a reduction in the time devoted to shopwork much may be done to better the theoretical side of the work and at the same time leave the course in shopwork sufficiently complete, so that the students will be familiar with the methods of doing such work, a requirement absolutely essential to the successful designer of machinery.

In the senior year a student has in the past selected one of the five options (*i. e.*, locomotive, mill, marine, heating and ventilation, or steam turbine) and has devoted to this option seventy-five hours in the first term and one hundred and twenty hours in the second term. As the students have had a thorough training in steam, applied mechanics and in other allied subjects they are in a position to start at once on the detail of the option selected and in one hundred and ninety-five hours have heretofore in some cases, we believe, spent too much time on details.

The department feels that a student should have first, a general knowledge of all of the options and then be given more specific instruction in some one option. To this end the department has this year planned to give all of the men during the first term a course dealing with the design of a mill or of a factory building; the fire protection of such a building; the distribution of power; when to use brick and when to use concrete; and the cost. This is to be followed by lectures on the heating and ventilation of such a building, including discussion of air washing and humidifying. A number of lectures are then to be given on the propulsive machinery of a ship, these being followed by some general lectures bearing on the development of the locomotive.

At the beginning of the second term the student decides on the option he is to take and during this term has one hundred and twenty hours allotted to this specialty.

The course in machine design is now under the charge of Professor Haven. The work for the coming year is to consist first, in the completion of the design and calculation of a boiler started in the latter part of the third year. Following this a complete design of a straightening press is to be made. This will involve an application of the efficiency of screws and gear trains, and of the principles governing the design of iron castings. This problem will afford a broad study of static stresses or forces at rest. As an illustration of dynamic stresses the design of a heavy bar-shearing machine of the gate type is to be worked out. This will bring in calculations upon friction losses, the strength of gear teeth and the proportioning of balance wheels. During the second term the forces occurring in a large cast-iron pulley will be analyzed and applied to the design of its various features. Lastly, certain features of the triplex power pump are to be used as an application of combined stresses. Throughout the course many lectures

will be given upon the general proportions of machine parts, in addition to those employed in the above designs.

Professor Riley, who is giving the lectures on dynamics of machines, has changed the course in certain details. Professor Lanza's new book on dynamics of machines is used as a basis for the instruction, and additional illustrations are given by means of a reflectoscope recently purchased by the department.

More time is now devoted to studying the measurement of power by methods applicable to large units and high speeds. Recent forms of transmission dynamometers are studied.

New problems have been introduced, involving the action of rotating and reciprocating parts in high-speed machinery and the calculation of balancing weights for preventing vibration. The purely dynamical study of centrifugal governors has been somewhat abridged in order to gain time for studying some special requirements of governors adapting them to special types of steam distribution. Methods of testing the precision of speed regulation are also discussed.

A review is made of the elementary principles of the dynamics of rotation, leading up to the more difficult subjects of whirling shafts and the rotation of bodies which are not in perfect running balance. Shop methods of testing and correcting the balance of such objects as steam-turbine rotors, armatures and automobile fly wheels are explained. A mathematical study of the gyroscope is not attempted, but a descriptive study is made of the application of the gyroscope to steering and steadying devices.

The subject of mechanical integration and the use of integral curves for solving some of the problems of dynamics which occur in the design of machinery has been developed from lessons which heretofore included only the geometrical proofs of planimeters. Methods of successive integration by means of the planimeter and more complicated instruments like the integraph are applied to determine the moments of inertia of rotating bodies and angular displacements of bodies subjected to the action of varying turning moments.

The course in industrial management will be given by Professor Park. This course will include a study of the staff and departmental organization of an industrial establishment and the relations of the various departments for economy of manufacture. Questions involved in the conduct of accounts, cost factors and the

effect on costs of different systems of distributing indirect expenses, will be considered with emphasis placed on the productive rather than on the commercial side. A study will also be made of the methods of superintendence and of the human factors in the organization and processes of modern manufacturing, as well as the study of the physical factors, the type of factory buildings and the influence of their design and equipment on the productive capacity. An examination of the organization and methods of some of our leading industries will also be made.

The course is too short to attempt to go into the complexity of the problems and questions of scientific management and the aim will be to give the student suggestions on the general nature and different types of factory management, so that he will be better able to confront problems of economic production and commercial duties when they come upon him. It is not expected to do more than to furnish him guidance to enter as a beginner one of the avenues of a productive department which lead to industrial management.

There have been in the past a number of requests from students for additional work in refrigeration. A general discussion of the subject of refrigeration, including the methods of calculating the refrigerating effect, has been given in the third year course in heat engineering, but there has not been sufficient time to go into much detail or to discuss at any length any other than the ammonia compression machine.

The new course in refrigeration offered by Professor Berry as an elective for this year purposes to place before the engineering students, to as great an extent as is possible in the allotted time, a broad presentation of the following important aspects of the subject:

The thermodynamics of the various refrigerants.

A study of the machines and refrigerative systems.

The insulating value of various materials and types of construction for warehouses, ice-plants, refrigerator cars and vessels, etc.

The proper conduct of storage warehouses; including circulation of air, ventilation, area and location of cooling surfaces, temperature, humidity, etc.

Different methods of manufacturing ice.

Liquifaction of gas—preparation of commercial oxygen and nitrogen—distillation and rectification.

It is hoped that this course will not only acquaint the student with the scope and commercial and mechanical aspects of this rapidly increasing branch of engineering activity, but that it will also serve to ground him more thoroughly in the general principles of thermodynamics and to extend his knowledge of engineering thermodynamics beyond the point reached by the general courses in heat engineering.

A discussion of the thermal processes in steam engine cylinders, boilers, condensers, etc., deals with saturated or superheated steam far below its critical temperature. A complete explanation of the action of carbonic anhydride refrigerating machines operating in the tropics requires an investigation of the properties of carbonic dioxide above its critical point and in the sub-cooled liquid as well as the superheated vapor region.

In analyzing steam and gas engine processes the student has become acquainted with the thermodynamics of a single substance, in discussing the ammonia absorption machine he must learn to deal with binary mixtures and become somewhat acquainted with the important subjects of distillation and rectification.

The desire for, and need of, instruction in this subject has been clearly demonstrated by the attendance at the lectures this term. The course is optional with the students and comes at the end of the day's work, yet some fifty students and instructors are attending regularly.

The students get, in their third-year heat engineering, a thermal study of the gas engine, illustrations of the larger gas engine units, the methods of governing and of scavenging, etc., employed in the large units; but little time, however, is given to the small units.

Professor Riley offers for this year an elective course of fifteen lectures on gas and oil engines, to students who have completed the regular instruction in heat engineering—the work to consist of a descriptive study of mechanical details rather than of thermodynamic principles.

The rapid development of gas engines during recent years has made this subject of general interest and frequent requests have been made for a special course of instruction along these lines. Already ten students of the fourth-year class have proposed to make their thesis investigations along some line of research connected with internal combustion engines.

The class work in applied mechanics and in testing materials

of the third, fourth, and graduate years, formerly given by Professor Lanza, has been taken over by Professors Fuller and Johnston, who have in turn transferred some of their class-room work to Messrs. Smith and Holmes. A revision of the courses is being made concerning both the subject-matter and the order of its presentation, and as far as possible these changes are to go into effect with the present third-year class. Professors Fuller and Johnston are engaged in preparing a new text-book on the subject, which it is expected will be ready for use during the next school year.

About two years ago a change was made in the methods of conducting tests in the engineering laboratories. In the past it had been the custom for an instructor to oversee and practically be in charge of the work carried on by the different squads of students. Today the sections are divided up into squads of three, and of the three in each squad one man is put in charge. These three men start the apparatus, conduct the test (under the direction of the student in charge) and write out a written report. From day to day the man in charge of the squad changes, so that every student has an opportunity to start the apparatus and to have under him other students for whom he is responsible. This method of conducting tests we have found to be far superior to the old method; the students take much more interest, and the results are much more satisfactory.

Changes have been made in the courses in mechanical engineering drawing during the last four years, both in the method of instruction and in the work assigned.

In the second-year course there has been introduced a system of preliminary sketches of problems and approval of finished drawings with a view to increasing constructive criticism while the student is working on his problem and decreasing the amount of destructive criticism after the drawing is handed in for a record. Before commencing the full-size drawing of a problem the student is required to prepare a half-size sketch sufficiently complete to indicate clearly the method of solution. This sketch is then submitted to an instructor who talks over the problem with the student and indicates errors, makes suggestions, or points out other methods of solution. This insures the student's understanding of the problem and makes a saving of time in many cases. Every effort is made to have the problem exemplify good current prac-

tice, in so far as is possible. Problems are assigned accompanied by blue prints,—the aim being to increase proficiency in the reading of blue prints as well as to require the student to analyze the mechanisms. Additions have been made to the set of standard miscellaneous machine details and pipe fittings, and the sheets are now lithographed in permanent form for students' further use. Valve gear layouts have been taken from practice, and each student is supplied with a set of blue prints thereof. A problem on the Corliss valve gear has been added as an example of a type of problem requiring a "cut and try" method of solution.

Chief among the changes which have been made in the machine drawing course is the requirement of a group of detail drawings to be made from a second machine after the student has completed sketches, finished detail drawings and an assembly drawing of another machine. In making these detail drawings the student works from sketches made by a classmate of a different group of parts of the machine than that sketched by himself. The assembly drawing is made from blue prints of drawings of a machine which the student has never seen, thereby furnishing excellent training in the reading of drawings. In making the second set of details the student now has better knowledge of the requirements of a working drawing and can carry the work far more comprehensively after the benefit derived from the preceding work.

In place of making a complete drawing of a boiler, the students now begin in the third year the first problem in machine design and carry the design of a horizontal multitubular boiler through the calculation and layout of the joint.

While not practicable to incorporate in the courses a system of checking drawings by the students themselves, a system of approval of drawings by instructors has been introduced. This system aids that part of the instruction which relates to the completeness of the drawings and methods of indicating results, and aims to prevent student carelessness and to eliminate his dependence upon others.

The mechanical laboratories which were formerly under the sole charge of Professor Schwamb, have been incorporated as a subdepartment of the mechanical engineering department and Professor Park has been appointed director by the department to supervise the running of these laboratories.

R. R. Heuter, who has been at Charlottenberg for two and one

half years on leave of absence returns to the department of machine design at the beginning of the second term. Heuter takes the examination for the degree of doctor of engineering in November.

C. A. Robb, a graduate of McGill University, who took the degree of M. S. at the Institute in 1910, has joined the teaching force of the department.

The assistants engaged in place of those who left are: J. S. Beamensderfer, A. M., M. E., Cornell University; T. H. Haines, S. B., M. I. T.; A. L. Gardner, S. B., M. I. T.; R. G. Adams, S. B., M. I. T.; H. W. Waterfall, S. B., M. I. T.

It is the intention to have a number of outside lecturers address the students in the department during the coming year. Among those who have signified their willingness to give such lectures are: William W. Dodge, Odin B. Roberts, Prof. Ira N. Hollis, Richard H. Rice, Charles T. Main, I. E. Moultrop, R. E. Curtis, Howard L. Coburn, Kenneth Möller and F. A. Hannah.

Will of Nathaniel Thayer

The will of Nathaniel Thayer, a member of the Corporation of the Institute who died March 23, was made public during the summer. By the terms of the will $250,000 is given to the Boston Museum of Fine Arts, and $50,000 each to the Massachusetts Institute of Technology and the Massachusetts General Hospital, these being his largest public bequests. The entire estate is estimated at $10,000,000.

Mr. Thayer was the son of Nathan Thayer, who was influential in the construction of western railroads, and Cornelia Van Rensselaer Thayer, daughter of Gen. Stephen Van Rensselaer of Albany. General Van Renesslaer was a descendant of the Rev. John Cotton, a Boston minister prominent in New England history. Mr. Thayer inherited $2,000,000 from his father, and increased his inheritance considerably. He was twice married, his first wife, Miss Cornelia Barroll of Baltimore, leaving him three children, one of whom, Miss Cornelia Thayer, married Count Von Moltke, the Danish minister to the United States. His second wife was Miss Pauline Revere, a descendant of Paul Revere.

IN HONOR OF RETIRING PROFESSORS

Professors Lanza, Chandler and Schwamb Guests at a Dinner Given by Members of the Faculty

It is sometimes said of bank presidents that "they seldom die and never resign." To the young Institute alumnus who returns to his early reunions and finds his old professors still at the helm the saying may seem equally to apply to members of our Faculty. But the man of longer acquaintance with our history knows that quietly, but steadily, and more rapidly than most realize, the personnel of our teaching force is changing. Members of the "old guard" are dropping out, by resignation or in obedience to the call that finally summons us all, and their duties are being taken up by younger men.

Doubtless most of our alumni now know that since the close of the past school year, three men, Professors Lanza, Chandler and Schwamb, have resigned from our Faculty. It was to give their colleagues a convenient opportunity to meet them and to extend to them good wishes, as well as from a desire to show the high esteem in which they are held, that a dinner was tendered to them by the Faculty on Thursday, October 26th, at the University Club. Between forty and fifty members, representing every department of the Institute, were assembled on this occasion, which brought out so strongly the element of brotherly good feeling that the sentiment was expressed by more than one that a Faculty dinner ought to be made an annual affair.

A half-hour's informal reception gave all a chance for a word of greeting to the guests of the evening. Following the dinner Professor Dewey, chairman of the Faculty, presided as toastmaster, and it is hardly necessary to say that he did so to the eminent satisfaction of the company.

In the absence of Professor Lanza, whose engagements in Philadelphia would not permit his presence here, Professor Richards delivered a cordial message received from him conveying his good

wishes to his former colleagues and expressing his pleasure at their kindly remembrance of him. Professor Richards then outlined the history of Professor Lanza's long connection with the Institute, covering forty years and beginning with his appointment as instructor in mathematics in 1871. Four years later he became professor of theoretical and applied mechanics, and for the past twenty-eight years has been in charge of the department of mechanical engineering. Reference was made to his success in gathering about him a strong force of younger men for carrying on the work of instruction and research in the department, to the great enlargement which has gone on in its experimental plant, and to the early and widely known tests on beams of commercial size which he inaugurated.

Turning next to Professor Chandler, whom he addressed as the "prisoner at the bar," Professor Dewey bade him say what he could for himself. His defense was conducted in that genial spirit which has won for him the affection of all who know him. He said he felt well able still to perform his duties, but jokingly explained that he preferred to have his friends say to him "Chandler, why did you resign" rather than delay until they should be moved to say "Chandler, why don't you resign." From the catalogue of 1888, the year in which he came to the Institute to assume charge of the department of architecture, he read the roll of the Faculty of that day, twenty-eight in number, but ten of whom are today actively associated with the Institute. Reference to the "Partial Architect," as he was then known, revived memories of a course which has long since been abolished. His characterization of Professor Tyler, who in 1889 became secretary of the Faculty, as the "only man at the Institute whom I feared," brought a round of laughter, from no one more hearty than from the innocent cause of that terror. Our regret at Professor Chandler's retirement from the position so long held was tempered by his welcome declaration that as professor emeritus he hoped still to render much service to the Institute in connection with its coming development.

Professor Schwamb was then called upon and gave some account of the work upon which he entered in 1883 under Professor Lanza. The admirable system built up in the mechanical laboratories, by which the principles of good workmanship are taught by application, but without such repetition as might be needed if the aim

were mainly to produce expert shop workmen, called for severe and unremitting effort and involved a load of responsibility and detail which has been, perhaps, but faintly appreciated by many of Professor Schwamb's colleagues. During vacations as well as in term time his labors continued almost incessantly, until he was at length compelled to take rest. The year 1890–91 he spent in foreign travel, returning to resume his duties at the Institute, which he now finds he must lay down for the protection of his health. He may have the satisfaction, however, of knowing that under his direction an important branch of our work has been developed upon a sound, rational basis and to a high state of efficiency. He is entitled, with the other professors who retire at this time, to a share in those simple words of praise which Doctor Dewey pronounced to be the highest, after all, that can come to any man,—"Well done."

DWIGHT PORTER.

Will of W. E. Chamberlin, M. I. T., '77

The will of William E. Chamberlin, '77, of Cambridge, who died suddenly at Manchester, Mass., August 6, 1911, gives $500 to the Boston Society of Architects, of which he was a member, and leaves the remainder of the estate to his wife, Emily D. Chamberlin.

It provides that upon her death two sevenths of the estate shall be given to the Cambridge Hospital, an equal amount to the Cambridge Home for Aged People and one part each to the Avon Home, Holy Ghost Hospital and Massachusetts Institute of Technology for use in its architectural department.

New Register of Former Students

The work of compiling a new Register of Former Students is now going ahead in earnest and it is expected that it will be published sometime in the spring. In the new publication an attempt will be made to get an accurate record of every man listed. Your co-operation will be of great assistance.

STEADY INCREASE IN ENROLLMENT

Fifteen Hundred Sixty-seven Students Registered this year—New men alone represent ninety-seven different colleges—There are students from twenty-six foreign countries and many candidates for advanced degrees

Attendance at the Institute continues to increase slowly as it has for several years past. It has a present enrollment of 1567 and is within 41 of the high water mark record of 1902–3, the last year of the $200 tuition fee. For the last five years the figures have been:—1907–8, 1415; 1908–9, 1461; 1909–10, 1479; 1910–11, 1506; 1911–12, 1567.

The number of college men attending the Institute continues to be large. There are 81 graduates of other colleges among the new men, and 79 who have attended other colleges but who have not been graduated. There are 609 new men coming to the Institute, and 400 in the freshmen class.

The colleges sending new men:—University of Alabama, University, Ala., 1; Amherst, Amherst, Mass., 1; Annapolis Naval Academy, Annapolis, Md., 1; Armour Institute, Chicago, Ill., 5; Bates College, Lewiston, Me., 1; Baylor University, Belton, Texas, 1; Bowdoin College, Brunswick, Me., 1; Brooklyn Polytechnic, Brooklyn, N. Y., 1; Brown University, Providence, R. I., 1; Boston University, Boston, Mass., 3; University of California, Berkeley, Calif., 3; Case School of Applied Science, Cleveland, Ohio, 5; Chekiang Provincial College, China, 1; Chinese Naval College, 1; Colby, Waterville, Me., 2; Colorado College, Colorado Springs, Colo., 2; Columbia, New York City, 2; Cornell, Ithaca, N. Y., 2; Dalhousie College, Halifax, Nova Scotia, 1; Dartmouth College, Hanover, N. H., 5; Denison University, Grandville, Ohio, 3; Drake University, Des Moines, Iowa, 1; Fu-chou Provincial College, China, 1; Furman University, Greenville, S. C., 1; Georgetown College, Washington, D. C., 3; Georgia School of Technology, Atlanta, Ga., 1; Grinnell College, Grinnell, Iowa, 1; Grove City College, Grove City, Pa., 1; Harvard University, Cambridge,

Mass., 5; Haverford College, Haverford, Pa., 1; Heidelberg, Tiffin, Ohio, 1; Holy Cross College, Worcester, Mass., 1; Imperial Polytechnic College, Shanghai, China, 4; University of Illinois, Urbana, Ill., 2; Kenyon College, Gambier, Ohio, 1; Lafayette College, Easton, Pa., 2; Leland Stanford University, Stanford University, Calif., 1; McGill University, Montreal, Canada, 1; Massachusetts Agricultural College, Amherst, Mass., 1; Miami University, Oxford, Ohio, 1; Michigan State Agricultural College, Agricultural College, Mich., 1; Michigan State Normal, Ypsilanti, Mich., 1; Military Academy of South Carolina, Charleston, S. C., 1; University of Minnesota, Minneapolis, Minn., 3; Nanking Naval College, China, 1; National College of Paraguay, 1; National College of Syria, 1; University of Nebraska, Lincoln, Neb., 1; College of the City of New York, New York City, 2; North Carolina College, Mount Pleasant, N. C., 1; University of North Carolina, Chapel Hill, N. C., 1; North Dakota Agricultural College, Fargo, N. D., 2; Oberlin, Oberlin, Ohio, 1; Occidental College, Los Angeles, Calif., 2; Pennsylvania College, Gettysburg, Pa., 1; University of Pennsylvania, Philadelphia, Pa., 2; University of Pittsburgh, Pittsburgh, Pa., 1; Polytechnic School of Bahia, 1; Princeton, Princeton, N. J., 4; Purdue University, Lafayette, Ind., 1; Queen's University, Kingston, Ont., 1; Radcliffe, Cambridge, Mass., 1; Randolph-Macon College, Lynchburg, Va., 1; Richmond College, Richmond, Va., 1; University of Rochester, Rochester, N. Y., 1; Rose Polytechnic Institute, Terre Haute, Ind., 1; Royal Military College of Canada, 2; Rutger's College, New Brunswick, N. J., 1; Sewanee University of the South, Sewanee, Tenn., 1; Sheffield Scientific School, New Haven, Conn., 1; Shuntien College, China, 1; Spring Hill College, Mobile, Ala., 2; State Agricultural College of Colorado, Fort Collins, Colo., 2; St. Mary's College, 2; Syrian Protestant College, Beirut, Syria, 1; Syracuse University, Syracuse, N. Y., 1; Tangshan Engineering and Mining College, 1; University of Texas, Austin, Texas, 4; Trinity College, Hartford, Conn., 3; Tufts College, Medford, Mass., 6; Vanderbilt University, Nashville, Tenn., 1; University of Virginia, Charlottesville, Va., 4; Virginia Polytechnic, Blacksburg, Va., 1; Virginia Military Institute, Lexington, Va., 4; Washburn College, Topeka, Kan., 1; Washington and Lee University, Lexington, Va., 1; Washington and Jefferson College, Washington, Pa., 2; University of Washington, St. Louis, Mo., 2;

West Point Military Academy, 2; Whitman College, Walla Walla, Wash., 1; Williams, Williamstown, Mass., 6; University of Wisconsin, Madison, Wis., 3; Worcester Polytechnic, Worcester, Mass., 4; Wuchang Provincial College, China, 1; Yale, New Haven, Conn., 1; Yankton College, Yankton, S. D., 1.

There are now at the Institute 29 Chinese sent here by the Imperial Government as well as 7 other Chinese students, making 36 in all. There are more foreigners at the Institute than ever before, the number being 100. They represent 26 countries as follows: Argentine Republic, Australia, Brazil, Canada, Central America, Chile, China, Cuba, Egypt, Ecuador, France, Germany, Great Britain, Greece, Hawaii, Honduras, Japan, Mexico, New Zealand, Ottoman Empire, Paraguay, Peru, Porto Rico, Russia, Switzerland and Syria.

The figures of registration will not be available until December, but the above is very nearly correct. There are ten candidates for the degree of Doctor of Philosophy; 3 for the degree of Doctor of Engineering; 27 for the degree of Master of Science, and 4 Resident Fellows. There are 7 women registered as regular students.

Following is a partial list of sons of former students registered this year: Baker, D. F., son of David Baker, '85; Bryant, W. A., son of Henry F. Bryant, '87; Capen, G. P., son of George H. Capen, '83; Crosby, I. B., son of William O. Crosby, '76; Duff, J., Jr., son of John Duff, '81; Faunce, K. W., son of Linus Faunce, '77; Fiske, C. P., son of J. Parker B. Fiske, '89; Freeman, R. M., son of John R. Freeman, '76; Lawrence, G. C., son of James W. Lawrence, '79; Loveland, E. M., son of James W. Loveland, '89; Ober, C. H., son of Arthur J. Ober, '92; Otis, H. N., son of Margaret Noyes (Mrs. C. P.), '82; Tenney, J. B., son of Frank Tenney, '83; Pickering, H. B., son of Oscar W. Pickering, '89; Plimpton, L. R., son of Arthur L. Plimpton, '77; Schwarz, L. B., son of Theodore E. Schwarz, '76; Stimpson, E. F., son of Thomas F. Stimpson, '77; Woodbridge, S. T., son of S. Homer Woodbridge, '79.

The annual dinner of the Alumni Association will be held on Wednesday evening, January 3. It will be an important meeting and will begin a year of the greatest development in our history.

COUNCIL HEARS ABOUT THE SITE

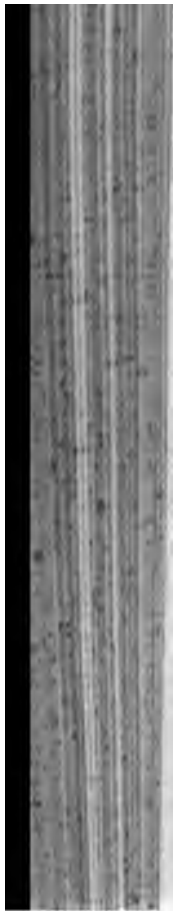
President Maclaurin, Mr. Wigglesworth and Mr. Morss tell about Charles River Basin tract and why it was selected—New By-law proposed to comply with Post Office ruling

At a meeting of the Alumni Council held at the University Club, October 23, President Maclaurin, Mr. Wigglesworth and Mr. Morss, '85, members of the Corporation committee on site were present, and gave a description of the property as well as the story of its selection. Doctor Maclaurin said that nothing now remained to consummate the purchase of the land on Charles River Basin, except an act by the city of Cambridge officially closing certain streets on the tract and the delivery of a good title to the property. He hoped that the whole matter would be happily solved before long. He spoke of the various considerations for and against the five sites considered and the reasons why the final selection was made. He referred briefly to the large amount of money that would be necessary to erect the buildings and expressed his full confidence in the ability of the alumni and friends of the Institute to secure the necessary funds.

Mr. Wigglesworth thought that the site chosen gave reasonable prospect of being a permanent location. No other site could have afforded the same element of stability that this one does. He said that the Corporation appreciated the spirit in which the announcement of the choice of location had been received even by those who had preferred some other site. He believed that the whole matter had come to a successful and very happy conclusion.

Mr. Morss quoted a Boston citizen who expressed the opinion that the building of the Institute buildings on the site selected would afford the most dignified advertising that any institution of the kind could possibly have. He spoke of the esplanade park which is an additional asset to the site and that without expense. In referring to the development of the property on a proper scale, he said that while former students of the Institute will be called

MEMBERS OF THE NEW BEDFORD CLUB WAITING FOR THE BAKE TO BE OPENED



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upon to contribute as generously as their means will afford, it will be impossible to raise all the money necessary, but he hoped that every man who has an interest in the matter will do what he can and do it promptly when the time comes. One alumnus of the Institute, duPont, '84, has made this whole expansion possible. The aid recently voted by the State was an absolute necessity. The signing of the bill by the Governor was an expensive thing for the Institute alumni. They were tired of paying last year's coal bills, although they had done it cheerfully for five years, but would respond with alacrity if their money could be devoted to the general purposes of constructing the new buildings.

Frank E. Shepard, '87, president of the Denver Engineering Works, Denver, Colorado, who was present at the meeting, told of the great interest that the men of the West have in Technology and how thoroughly in sympathy they are with this movement. He was delighted with the choice of the Charles River Basin site and was impressed with its great possibilities for development. He felt that when the men of the West were asked to contribute funds, the response would be hearty and spontaneous.

The following proposed amendment to the by-laws was presented by the executive committee of the Alumni Association to conform to the ruling of the Post Office Department:

> The payment of fifty dollars at any one time shall exempt any member from further payment of dues, and the treasurer of the committee on permanent funds shall pay each year to the treasurer of the association, one dollar for the subscription of such a member to the TECHNOLOGY REVIEW so long as it is the official organ of the association.

This was proposed to take the place of the present section 2, of article VI which reads as follows:

> The payment of twenty-five dollars at any one time shall exempt any member from further payment of dues.

The executive committee was authorized to publish this in the REVIEW and to present it to the Council for action at some subsequent meeting when it shall have been published thirty days.

It was thought best to hold the REVIEW forms open to give our readers a report of the hearing before the Cambridge City Council, November 14.

ARCHITECTS HONOR PROFESSOR CHANDLER

Dinner given to the retiring head of the Department of Architecture by the Boston Society of Architects—Speeches, gifts and good feeling abundant

Professor Francis W. Chandler, the retiring head of the department of architecture at Technology was the guest of the Boston Society of Architects at a dinner given October 27. Among those in attendance were representatives of almost every organization which has been associated professionally with Professor Chandler, including of course, students of the department and many intimate friends.

In introducing President Maclaurin, the first speaker of the evening, Mr. R. Clipston Sturgis, president of the Boston Society of Architects, spoke of the great future that is opening for Technology in every branch of science and particularly of the great force the architectural department is exerting toward improving architectural standards in this country. Doctor Maclaurin paid a graceful tribute to Professor Chandler outlining his connection with the department and gave some idea of the debt the Institute owes to him for his accomplishment of elevating the standard of the department to the highest place. He said that Professor Chandler had made a symphony concert of the department in the harmony that had prevailed during the years he had charge of it.

In the absence of Professor Lowell of Harvard who was out of town, Professor Warren, of the Harvard Architectural Schools, presented congratulations and good wishes from the university as a whole, and particularly from the department of architecture.

Professor Lared of the architectural department of the University of Pennsylvania expressed his personal gratitude for the assistance and advice that Professor Chandler had given to him and his department.

Mr. Robert S. Peabody, of the Corporation, an intimate friend and colleague of Professor Chandler, referred to his early life, his bravery as a soldier in the Civil War and his big heart and manly qualities which endeared him to all his associates. He said in

conclusion that it is great to be modest, it is great to be a good architect, it is great to have made the Institute the foremost architectural school in the country, to be sought after by all for advice, but it is far greater to have a big and overpowering love for all mankind.

Professor Despradelle was unable to attend the banquet, but was represented by Mr. Howard Walker who voiced the deep regret of the architectural department on the departure of their friend and guide. Mr. Walker then presented Professor Chandler with an illuminated vellum engrossed with the sentiments of the department and read a letter from Professor Despradelle.

Mr. J. H. Parker, '97, who represented the former students, sang a song dedicated to Professor Chandler and written by Mr. Stanley Parker.

President Harkness of the Technology Architectural Society voiced the feelings of the students on the departure of their loved professor and presented him with a loving cup as a tribute from the society.

Professor Chandler responded in a happy vein only to be called to his feet again by Mr. Newhall, president of the Boston Architectural Club. He announced that the guest had been made an honorary member of the club, an honor which has been given only to six other men.

President Sturgis then presented him with a handsome watch, the gift of the Boston Society of Architects, and stated that a medal had been founded for fifth year students in the department of architecture at the Institute in the name of Francis W. Chandler.

Among the other speakers were Mr. A. W. Longfellow and Mr. Arthur G. Everett.

Nearly Five Thousand Circulation

A year ago the REVIEW congratulated itself that it had reached a circulation of 4200 copies. The circulation today is 4800. The printer's order for this issue, however, is 10,600, as a copy is being sent to every former student so that he may know of recent important developments. The advertising rates, which are based on less than half this circulation, have not been increased. The rates are given on the third advertising page of this number.

NEWS OF ALUMNI ASSOCIATIONS

New York Club taking great strides ahead—Many activities planned for the winter—Season's program of Pittsburgh Association—Cincinnati men have summer picnic—Doings in Minnesota—Puget Sound Club Entertains ex-Governor Draper

THE TECHNOLOGY CLUB OF NEW YORK.—The new year of activity at the club house has been enthusiastically inaugurated a month earlier than usual. During the summer and late into the fall, the out-of-door dining pavilion was an attractive resort and the house was more popular than ever. Class dinners are now in full swing, '07, '08 and '10 among the leaders. On September 25, the class of 1910 assembled at a special dinner to 1911, given by authority of the board of governors. About thirty men were present including thirteen 1911 men and the affair was conducted very gracefully by Guy Shaffer, '10, chairman of the class reunions committee, with the president, secretary and two members of the board as guests. Mr. Martin, '11, was appointed to look out for 1911 men in New York.

On September 29 a vaudeville smoker, demanded as the result of the surprising success of the June vaudeville smoker, opened the season. With a clever man at the piano, the members joined in Tech songs, a monologue artist continued the jollity, a leger-demain and mind-reader man performed some marvelous stunts with the aid of the usual paraphernalia and several obliging but somewhat disconcerted members, whose minds were amazingly well read, and the star of the evening was a very popular young lady with a most melodious voice.

Between the acts the president welcomed the members and particularly 1911 men, present by special invitation in accord with the custom of receiving members of the graduating class at the opening smoker. An enthusiastic response greeted the suggestion that, as the term on the Corporation of the Institute of George W. Kittredge, '77, our vice-president, expires in 1912,

New York is entitled to retain its representation and as it is rumored that a New York man of ability and fitness has been nominated by the Alumni Association,—call him Smith,—he should for the good of the Institute, New York, Boston and all the alumni, be overwhelmingly elected. We feel confident that the alumni wherever situated will recognize that by maintaining New York's representation, a valuable element of strength will be gained by the Institute, not only in the work of the Corporation, but in developing her alumni coöperation. Thus it is now proposed that a luncheon be given to our candidate, October 27, which will bring an outpouring of New York men, both members and non-members of the club.

The second event of the season was an address Wednesday evening, October 11, by Roger W. Babson, '98, of Technology, whose articles relating to financial topics in the *New York Times* and other publications are well known. The subject, "Methods of Anticipating Business Conditions," afforded special interest to all our members whose success necessarily depends upon business activity. In the early part of the same evening Van R. Lansingh, '98, chairman of the annual dinner of 1912 to be held January 20, and to which all Tech men everywhere are invited, met with his committee of fifteen members to arrange details for a thoroughly successful and unique banquet which he states will surpass all prior records in attendance, interest and enthusiasm.

Plans are already being formulated for further development of the club. Our membership has increased to 530 and we are fast outgrowing the club house accommodations. A finance and building committee including James A. Emery, '93, George W. Kittredge, '77, and Ralph H. Howes, '03, is preparing an analytical statement of needs, resources and feasible plans for additional facilities, to form the subject of a special meeting of the club during the year.

Of special interest have been recent successes of several of our members. On completion of his cross-country flight from St. Louis to New York a telegram of congratulation from the club was sent to Harry N. Atwood, '05. John D. Moore, '95, is now presiding at Albany as conservation commissioner of the state, with his usual energy and ability. Alex. Rice McKim, '86, has just been appointed by the commission, inspector of dams and reservoirs, and will make exhaustive reports as to dams and res-

ervoirs throughout the state to prevent such calamities as recently occurred at Austin, Pa. H. K. White, '99, was recently a successful competitor for architectural design and erection of a group of buildings for the State Capitol of Washington. James C. Duff, '86, for four years in charge of Federal food inspection in New York and vicinity, from which position he resigned this year to resume private practice, received in the August number of the *National Food Magazine* a very complimentary statement of his work as consulting expert and chemist. Norman Paul Gerhard, '06, who recently wrote a treatise on "The Water Supply, Sewerage and Plumbing of Modern City Buildings," has been awarded honorary degree of Doctor of Engineering from the Technical University of Darmstadt, Germany. And Mr. Kai Tse, '08, of Kwangtung, China, who, with a number of students in his charge, has been for the last two years investigating mines in Arizona and visited the club in September before returning to China, was the subject of an interesting article in the *New York Sun*.

Meanwhile our committee on business opportunities is acquainting New York men with new possibilities for success.—*William H. King, '94, President, 17 Gramercy Park, New York City.*

Pittsburgh Technology Association.—The Pittsburgh Association has entered the season of 1911–12 with a program that will surpass in interest those of former seasons.

Four general meetings have been scheduled: The first to be held on November 18 next; the second about January 13; the third, the annual dinner about the second week of March; the fourth about May 11, 1912. The feature of the first meeting will be a grand rally smoke—with buffet lunch finale. There will be an address by one of the "commission councilmen" of the city of Pittsburgh on the subject of "The Demand for Technical and Business Men in City Government."

Technology bequests and financial interests will be reviewed with the idea of keeping this subject alive.

The meetings of the association will be held at the University Club, Grant Boulevard.

Definite outlines of future meetings and attractions will be furnished later, and we earnestly request all visiting Tech men "to drop in" on us whenever possible to do so. The secretary's office

is open twenty-four hours of the day where information will be cheerfully furnished.

The offices of the secretary-treasurer of the association will be moved to 5810 Murrayhill Place, Pittsburgh, Pa., after November 1, 1911. Officers, season 1911–12:—president, Warren I. Bickford, '01; vice-president, Fred Crabtree, '89; secretary-treasurer, L. K. Yoder, '95; executive committee, Morris Knowles, '91, W. E. Mott, '89, Edward Seaver, Jr., '01; alumni council representative, H. H. Rapelye, '08.

Charles F. F. Campbell, '01, secretary of the Pennsylvania Association for the Blind, has tendered his resignation to this institution, and accepted the management of the Blind Associations of the entire state of Ohio. Mr. Campbell is now located at Columbus, Ohio. While we miss his beaming countenance and most agreeable fellowship, we are glad he has remained in the Pittsburgh district of the association and look to him for his ever ready support in Tech affairs. Everyone wishes him continued success in his great work.

Waldso Turner, '01, has returned from the West, where he sought entire rest to recuperate from a six months' illness. "Casey" is on the job again and can be counted on to assist in the program of 1911–12. We are mighty glad to see him back at the old stand, Iron City Engineering Company, Frick Building, Pittsburgh.

H. M. Hallett, '11, has returned to Pittsburgh to continue his work with the Unit Construction Company, builders and erectors of all classes of concrete construction, on the unit plan basis.

Norman Woolridge, connected with the Equitable Life Assurance Company at Pittsburgh, Pa., has been elected a member of the Alumni Association and we are glad to have him with us.—*L. K. Yoder, '95, Secretary-Treasurer, 5810 Murrayhill Place, Pittsburgh, Pa.*

Cincinnati M. I. T. Club.—Since the latest news from this hustling Tech aggregation some things have happened of more or ess general interest. Our annual summer picnic outing came off in due course and although Hooker, who had been appointed baseball commissioner, failed to produce his troupe of hitters, we fell back on that good old standby, duck-on-the-rock, formerly practised on the Pierce Building mall.

After a hearty luncheon, the pictures taken at the last Tech-

nology reunion were thrown on a screen as well as a number of up-to-date slides, provided by the alumni office, which had never previously been shown. Since the outing the lunch attendance has braced up a little, and as soon as cooler weather comes on we expect the regular meetings at the Bismarck Grill, on Tuesdays, from 12 to 1 p. m. to become the center of an enthusiastic Tech throng.

We have had several additions lately to our club—both active and associate. Of the active, Kruckemeyer and Strong, both 1911, have returned to the city and are expecting (or I should say expected) to do their share. Dickinson, '08, is here now in capacity of assistant surgeon of U. S. Marine Corps in recruiting service.

The firm of Garber & Woodward, both '03, has just been singularly honored by their selection as associate architects with Gilbert of New York in the design and erection of a new 24 to 30 story building here on the site of the lamented Chamber of Commerce. The new building is to be the home of the Union Central Life Insurance Company.

These two Tech men together with Tietig and Lee, both of '98, seem to have been very fortunate in providing the city with its new school houses and Carnegie libraries.

Tietig is now a double Roosevelt member with Schaefer, '05, and Hooker, '97, pushing him for the honors. I believe if the roster of the Cincinnati Club was called we would more than show up with our percentage of future Tech men and co-eds.

Our organization is not quite like some of the others in our sister cities. Most of our men are of the old guard and we have not the numbers of the newer generation that the Pittsburgh and Chicago clubs have, so that our meetings other than our weekly lunches are somewhat irregular. It is our hope this winter to have a few more evening meetings at which those who are not able to meet at lunch can join us.

On the evening of October 7 the University Club of Cincinnati opened its season with an intercollegiate smoker for all the local alumni associations. Some three hundred college men accepted the invitation and the fun was fast and furious. It would be hard to find an occasion other than big intercollegiate athletic meets at which there were more diversified songs and college yells. Statistics are not available to show the number of different colleges represented, but M. I. T. was there with a full quota.

Meetings such as this tend very materially to renew the Alma Mater feeling as well as good fellowship and our club feels much inspired to more frequent informal gatherings for the coming winter and hopes to make M. I. T. in Cincinnati stand out and mean something.

We have had two more associate members added to our list within the past few weeks. Dixon, '06, announces a future co-ed and Garber, '03, goes him one better by informing us that his son is to be a full fledged Techite.

The question has arisen as to whether it would not be an advisable plan for our club to secure, as an organization, one or more non-resident memberships in the New York Club and the matter has been taken up with that body, the point being that as New York probably has the largest body of alumni outside of Boston many of the Western men going East would feel free to avail themselves of the comforts of that club.

The Cincinnati M. I. T. Club has luncheon regularly on Tuesdays at the Bismarck Grill from 12 to 1.30 and hopes to see visiting Tech men there.—*Stuart R. Miller*, '07, *Secretary, 3366 Morrison Avenue, Clifton, Cincinnati, Ohio.*

Technology Club of Minnesota.—Very little of interest to Technology in general has transpired here during the past summer. The members have been scattered, some living in the country, and others,—numbered among the more fortunate,—have been basking in the luxury of vacations.

The Secretary has endeavored to obtain an accurate list of the members of the club and eligible Technology men living in the state, and has found many names on his lists,—culled from local information and graduate registers,—to be either non-existent or obsolete. New names have been added, however, so that our total of sixty-two members has been kept practically intact.

Of these men, ten are located in Duluth, six on the Range, and forty-five in the Twin Cities, of which Minneapolis boasts twenty-eight. The president of the club, Henry Yoerg, '95, is a St. Paul resident while the remaining three officers are located in Minneapolis.

The club plans to hold informal gatherings every two weeks during the winter and the younger members are being counted upon to provide more or less music, and in fact, to put a spirit

into the club which it has lacked, mainly from the fact that the majority of the members have been long removed from the Institute and possibly excusable for this reason for some of their lack of interest in things Technological.

The Minnesota Club extends greetings to her sister clubs and wishes them success and prosperity for the coming winter.—*Clifford C. Hield, '10, Secretary, 1722 Fremont Avenue, South, Minneapolis, Minn.*

Technology Club of New Bedford.—Twenty-four members of the Technology Club of New Bedford sat down to the annual clambake at George Nye's country place, near Horse Neck, on Saturday, October 14.

It was a good bake, and afterwards, leaving Roy Swan to finish the lobsters and the beer, the rest of the guests adjourned to an adjoining field where a game of ball was played that has not been equalled in any league this season. Captain Earl's team won 23 to 9. Then came a tug-of-war in which the superior strength of Captain Wing's team overcame the preponderance of weight as represented by Captain Young's team.

An invitation had been extended to Harry Atwood, '05, who was flying in New Bedford that day, to visit the bake, but owing to an accident he was unable to attend.—*Charles F. Wing, Jr., '99, Secretary, 36 Purchase Street, New Bedford, Mass.*

Technology Club of Puget Sound.—A luncheon given to the Hon. Eben S. Draper, '78, ex-governor of Massachusetts, on July 8, called out all the men in this part of the country and was a very happy occasion. A number of prominent state and city officials were present to meet our guest. Activities for the coming season have not yet begun, but we expect to have a very lively winter as soon as President Dabney returns to start the ball rolling. —*L. A. Wallon, '04, Secretary, Seattle Electric Company, Seattle, Wash.*

MANY CHANGES IN TEACHING STAFF

The official list of changes in the instructing staff shows that there have been forty-three replacements of last year's professors or instructors plus five additions, forty-eight new men. Chemistry and electric engineering are the departments in which the largest additions have been made. In chemistry the changes include the promotion of five instructors or assistants and the addition of six. In electrical engineering three additional instructors may be noted. Associate Professor Harrison W. Smith is abroad on leave and the department has selected W. S. Gorton from Johns Hopkins to fill the gap.

In the department of mechanical engineering Professor Gaetano Lanza has been made emeritus and Professor Chandler and Professor Peter Schwamb retire. Chemistry lost Mrs. Ellen H. Richards at the end of last term and her place has not been filled. R. S. Williams and W. T. Hall have been promoted from instructors to assistant professors, while Gilbert N. Lewis moves up from assistant professor of chemical research to full professor. In biology and public health, Instructor Selskar M. Gunn becomes assistant professor, returning to the Institute after a season of special work for the municipality of Milwaukee. In mathematics E. B. Wilson becomes professor and in military science Major E. T. Cole replaces Major E. V. Bookmiller. Those who have had business with the president's office will miss his assistant of last year, Maurice R. Scharff, who has taken a position with the New Jersey State Board of Health.

No more Associate Members

By virtue of the vote of the Alumni Association abolishing associate membership, and making all former students eligible to full membership in the association, the executive committee of the Alumni Association recently passed the necessary vote making all associate members in good standing, full members. Hereafter there will be no such distinction made.

PROFESSOR BARDWELL GOES TO CLEVELAND

Prof. Fred L. Bardwell, '84, resigned his position as assistant professor of chemistry at the Institute and became identified with the Case School of Applied Science at Cleveland at the beginning of the fall term.

Professor Bardwell was one of thirteen of '84's men to come back to the Institute as assistant on graduation. He served for two years under Professors Nichols and Norton and since that time with Professor Pope. In 1889 he was virtually director of the laboratory of general chemistry, which position he held until last June. In 1903–4 he spent a year abroad studying with Ostwald at Leipsic.

In collaboration with Doctor Norton after Professor Nichols' death, he edited the familiar "Laboratory Experiments" which reappeared frequently in revised editions.

For a number of years he gave instruction in chemistry in the Boston Normal School of Gymnastics, whose classes, like those of Boston University, received some scientific training at the Institute. Surprise was sometimes expressed that in these days when research is such a word with which to conjure, no researches came from his pen. The reason for this is to be found not in his lack of desire for research or of appreciation of its worth, but in his high sense of duty to his students, and the lack of time for thought and of a congenial place in which to carry it out. He was, however, much interested in rubber chemistry and devised a process for rubber reclaiming.

Professor Bardwell is an excellent teacher and a most faithful and conscientious man: if it were a question of elucidating a point to a student or spoiling one of his own experiments, the experiment was spoiled; and this was of no infrequent occurrence.

He has full charge of freshman chemistry—lectures and laboratory work—at the Case School of Applied Science, writes enthusiastically of his work and prospects, and is delighted with Cleveland.

A. H. G.

NEWS OF THE INSTRUCTING STAFF

Professor Davis R. Dewey served as delegate of the Institute at the inauguration of Guy Potter Benton as president of the University of Vermont, October 6.

Among the distinguished lecturers which have been secured by the Harvey Society for the coming year is Professor William T. Sedgwick.

President Maclaurin spent a part of August and all of September in Europe where he made a study of British institutions for technical training.

Among the professors who spent their vacation abroad this summer were Professor Spofford, Professor Peabody, Professor Jackson, Professor Cross, Professor G. N. Lewis, Professor Noyes, Professor Allen, Professor Sherrill, Professor Hofman, Professor Wickenden and Professor Shimer.

Dr. R. A. Daly is undertaking the work of drawing the geologic section of South Central British Columbia along the line of the Canadian Pacific for the Canadian government with Mr. N. L. Bowen, '10.

Professor C. W. Doten and three other members of the Massachusetts Commission of Industrial Accidents attended a conference of the Workingmen's Compensation Commission of several states, in Chicago last month. The meeting was held in co-operation with the New York Commission which is investigating the same subject. Professor Doten is chief investigator for the Massachusetts commission.

Professor William T. Sedgwick was present at an all-day session of the Congress of the New York Commission on Milk Standards called by the New York Milk Committee, October 5. The commission formally adopted four grades of milk, certified, inspected, pasteurized and cooking. Only the first three are to be used for drinking.

TECH MEN IN THE PUBLIC EYE

CLARENCE W. GOLDSMITH, '96, has been engaged by the city of Boston as engineering expert to install the new high water pressure system for fire-fighting purposes. The city is authorized to spend for this purpose, at least $150,000 annually, but not more than a million dollars in six years.

FRANK E. HERMANNS, '99, has been made the head of the structural engineering department at the Stevens Institute of Technology, Hoboken, N. J. Professor Hermanns has had a wide experience in this line of work, not only in this country but abroad. In 1907 he went to Tientsin, China, as professor of railroad and structural engineering in the Peiyang University. He was afterwards transferred to the government railroads and did a considerable part of the engineering work on the Tientsin-Pukow line.

JOSEPH DANIELS, '05, formerly assistant professor of mining engineering at the Lehigh University, South Bethlehem, Pa., has recently been made an associate professor.

ALLEN S. CROCKER, '97, formerly head of the mechanic arts course of the Mechanics' Institute of Rochester, N. Y., has recently been made superintendent of the department of industrial arts.

JOHN D. J. MOORE, '95, of New York City, has been nominated by Governor Dix to be one of the three members of the New York State Conservation Commission at a salary of $10,000 a year. Mr. Moore is a consulting engineer and has been prominent in connection with the proceedings for revising the building code. He was a member of the last commission appointed by the building committee of the New York City board of aldermen, and at the present time is the committee's principal adviser. He is also an expert examiner for the Municipal Civil Service Commission.

HORACE L. BRAND, '91, has prominently come to the front during the past ten years as a newspaper publisher in Illinois. He has recently become the sole owner of the Illinois Publishing Com-

pany, publishers of the *Illinois Staats-Zeitung*, the *Chicagoer Freie Presse*, the *Westen und Daheim*, the *Chicagoer Frauen Zeitung*, and the *Abend Presse*. In 1905 Mr. Brand purchased a quarter interest in the Illinois Publishing Company, and a few years later became a half owner.

TRACY LYON, '85, has been placed in charge of the production of all the constituent companies of the General Motors Company with headquarters in Detroit. Mr. Lyon goes to the General Motors Company from the Westinghouse Electric and Manufacturing Company, Pittsburgh, where he has had direct charge of the manufacturing operations of that industry for nearly five years. Soon after being graduated from the Institute Mr. Lyon became connected with the engineering corps of the Chicago Great Western Railway, rising through the position of superintendent of motor power and general superintendent, to that of assistant general manager of the system.

PAUL HANSEN, '03, state sanitary engineer of Kentucky, has been appointed associate in sanitary engineering at the University of Illinois and engineer to the Illinois State Water Survey. Prof. Edward Bartow is director of this survey, which has an appropriation of $20,000 for making a study of the water supplies of the state. After Mr. Hansen was graduated from the Massachusetts Institute of Technology in 1903, he entered sanitary work with the Massachusetts Board of Health, and was later connected with the design of the Columbus, Ohio, filter plant. He was for some time assistant engineer with the Ohio State Board of Health and acting chief engineer.

ALEXANDER RICE MCKIM, '86, consulting engineer, New York, has been retained by the New York State Conservation Commission to conduct an inquiry into the condition of dams and reservoirs in the state, for the purpose of taking such precautions as necessary to eliminate danger of failure. It is stated by the commission that the conservation law gives sufficient power to compel the owners of any dangerous dams to make them safe. Mr. McKim was formerly consulting engineer for the New York City Department of Docks. After being graduated from the Institute he took post-graduate courses at Columbia University and Technische Hochschule, Berlin.

HARDY CROSS, '08, has been made assistant professor of civil engineering at Brown University. Mr. Cross was formerly connected with the Missouri Pacific Railway, with headquarters at St. Louis, Missouri.

WILLIAM Z. RIPLEY, '90, formerly professor of economics at Harvard University, has recently been made Nathaniel Ropes professor of political economy. After leaving the Institute Professor Ripley was graduated from Columbia in 1892, and received a Doctor's degree from the same institution in 1893. He was professor of sociology and economics at the Institute from 1896 to 1902, and lecturer on physical geography and anthropology and on social geography at Columbia University from 1893 to 1901, when he became a professor of political economy at Harvard. He was the Huxley memorial lecturer at the Royal Anthropological Institute, London, in 1908.

WILLIAM R. COPELAND, '96, has been made chemist to the Metropolitan Sewerage Commission in New York City where he will have charge of investigations which are being made by the commission to throw light on the capacity of New York Harbor to assimilate sewage without offense. From 1893–7 he was in general charge of the sewage testing station work at Lawrence, Mass.; during the next two years, he was in charge of the experimental water-filtration plant at Pittsburgh; from 1901–4 he was in charge of the biological work at the Spring Garden Testing Station of the Bureau of Water in Philadelphia; in the following year he was bacteriologist at the sewage testing station at Columbus; from 1905–8 he was assistant engineer in the Bureau of Filtration in Pittsburgh; since 1908 he has been engaged as chemist in charge of the water purification plant at Columbus, Ohio.

HARVEY S. CHASE, '83, has been appointed one of the five commissioners on the President's Commission of Economy and Efficiency in the Federal service with headquarters at the White House, Washington, D. C. The general intent of the commission is to improve the methods of transacting public business of the government. The other members of the commission are Frederick K. Cleveland, chairman; William F. Willoughby, assistant director of the census; Walter W. Warwick, auditor of the Panama Canal and of the government of the Canal Zone; Frank J. Goodnow,

professor of administrative law at Columbia University, and Merritt O. Chance, auditor for the post-office department.

Francis C. Lincoln, '00, formerly professor of geology at the Montana School of Mines, has been appointed associate in mining engineering at the University of Illinois.

Cyrus C. Babb, '90, has been appointed chief engineer of the State Water Storage Commission of Maine, which office was created by a recent act of the legislature consolidating the State Survey Commission with the State Water Storage Commission. Under the act, the coöperative topographic work will be continued with the United States Geological Survey and data relating to water resources will be collected, this work to be under the direction of the chief engineer as executive officer of the commission. Mr. Babb has been serving as district engineer of the Geological Survey in charge of the coöperative work in Maine. He has been connected with the Geological Survey and the Reclamation Service since his graduation from the Institute.

William H. Pickering, '79. In a recent address by Prof. H. H. Turner, president of the mathematical and physical section of the British Association for the Advancement of Science, he says: "Think for a moment of the very considerable additions to our knowledge which have accrued from the discovery by Professor W. H. Pickering of an eighth satellite to Saturn. The discovery led directly to the recognition of the retrograde motion; and to explain this we were led to revise completely our views of the past history of the solar system. Incidentally it stimulated the search for other new satellites, resulting in the discovery of a curious pair to Jupiter and next of the extraordinary eighth satellite; while it was the investigation of the orbit of this curiosity which suggested an eminently successful method of work on cometary orbits. If we judge scientific work by its results we must take into account all this subsequent history in our appreciation of Professor Pickering's achievement."

Frank P. McKibben, '94, head of the department of civil engineering at Lehigh University, has been appointed consulting engineer by the state committee of Pennsylvania which is inves tigating the causes of the disaster at the Austin dam.

DEPARTMENT NEWS OF INTEREST

Investigation of Adaptability of Electric Vehicles for Trucking Purposes—New Books by Professors Spofford and Pender—Refrigerating Apparatus for Low Temperature Study—Mining Department News

DEPARTMENT OF ELECTRICAL ENGINEERING.—Prof. Harrison W. Smith, of the staff of the electrical engineering department, is on leave of absence to travel amongst the islands of the Pacific Ocean. Mr. W. S. Gorton of Johns Hopkins University has been appointed to take up Professor Smith's work during the year. Mr. Gorton was graduated as a Bachelor of Arts from Johns Hopkins University and then spent three years there in the graduate study of physics and applied electricity. He has also spent a brief period at the Schenectady works of the General Electric Company. He was recommended by the leaders in physics and applied electricity at Johns Hopkins University as one of the ablest men that have studied these subjects at that university.

In other respects the department staff remains much the same as last year. Mr. C. W. Green has been given additional responsibilities as instructor in the electrical engineering laboratory. Mr. F. G. Perry has been promoted to the post of instructor in that laboratory. Mr. Edgar P. Slack of the class of 1908 has returned as an assistant in the standardizing laboratory after spending a year and a half in the research work of the Carnegie Nutrition Laboratory. Mr. J. P. King, University of Maine, 1911, and Mr. David Terwilliger, Iowa State University, 1911, have also been appointed assistants in the standardizing laboratory. Mr. V. S. Foster, University of Kansas, 1910, and Mr. N. S. Marston, Technology, 1911, have been appointed assistants in the electrical engineering laboratory. Mr. H. F. Thomson, Washington University, 1910, who was assistant in the electrical engineering laboratory last year, has been appointed research associate.

The summer vacation was a busy one for the staff of the depart-

ment. Professor Jackson spent a good part of the summer in England and in the western part of this country on account of professional engagements. Professor Pender spent most of the summer revising his text-book on the *Principles of Electrical Engineering* in preparation for the new edition which has been published this fall, and in advancing the work on his *Electrical Engineers' Pocketbook* which is now in course of completion. Professors Laws and Lawrence spent a holiday in the Rocky Mountains. Professor Wickenden spent a holiday on a walking trip in the middle of England. Mr. Green spent most of the summer in the Lynn works of the General Electric Company.

The department has under way an important investigation of the adaptability of electric vehicles for trucking purposes, more especially with reference to the conditions in Boston and its vicinity. Mr. H. F. Thomson who has been appointed research associate, is carrying on this work under the immediate direction of Professors Pender and Jackson. The appropriation for the work was made to the Institute by the Edison Electric Illuminating Company of Boston, and the research is expected to extend over a period of not less than one year and to result in a report on the relative merits of electric vehicles, other mechanical vehicles, and horse vehicles for city and suburban delivery, for trucking and the other purposes for which vehicles are used in the city and its suburbs.

There are now three accepted candidates who are studying for the degree of doctor of engineering under the direction of the department, and six accepted candidates who are studying for the degree of master of science under the direction of the department. Each of these men is engaged in research work on some matter of importance. The electrical engineering undergraduate classes are also somewhat larger than the corresponding classes of last year at this time.

Two officers of the Coast Artillery Corps of the United States Army and one officer of the United States Navy have been detailed by their respective departments of the United States Government to study electrical engineering at the Institute of Technology, and they are now resident at the Institute.

Department of Civil Engineering.—The plans for the civil engineering camp are well under way, the construction of the main

building having already been commenced. It is expected that the camp will be ready for students during the early portion of the summer of 1912, and will open officially in August of that year.

Professors Allen and Spofford spent the entire summer in Europe, the latter visiting technical schools at Munich, Carlsruhe, Stuttgart, Zurich, Darmstadt, Dresden, Berlin and Hanover, giving special attention to the civil engineering departments of those institutions.

Changes in the teaching staff of the department have taken place only amongst assistants. Messrs. Clifford, Lovewell, Rew, Brownell, Clark, Horne and Wentworth resigned in June to engage in practice. Owing to the changes in the curriculum brought about by the prospective establishment of the summer camp in surveying, it has been found possible to reduce the number of assistants in the department; in consequence, two less assistants were appointed to fill the places of those who retired. The five new men appointed are Messrs. H. P. Ireland, H. L. Manley, I. F. Morrison, T. B. Parker and E. C. Vose.

Professor Spofford's book upon the *Theory of Structures* is now ready for general circulation. This book is based upon a series of mimeographed notes which have been in use for several years. Last spring a preliminary edition of the book was issued for use by students only, and this fall a revised copy with additional chapters is brought out. The publishers are The McGraw-Hill Book Company, New York.

The summer school of surveying was held this year at East Machias, Me., near the site selected for the permanent camp. The school was under the direction of Professor Robbins who was assisted by Professors Breed, Hosmer and Russell, and Messrs. Manley and Parker of last year's graduating class. The school was attended by twenty-two students, and a portion of the work consisted of the topographical survey of the site of the new camp.

In order to accommodate with drawing tables the unusually large number of fourth-year and graduate students taking work in the department this year, it has been found necessary to utilize for this purpose the space formerly occupied by Professor Russell's office and to construct a new office in the corner of room 41, Engineering A.

Department of Physics.—The third year class in heat for several years past has been so large that the overcrowding of No. 22, the largest available lecture room, has been such as to incommode every one, so that it has become necessary to divide the class into two lecture sections, and to repeat the lectures, which Professor Norton is now doing. No. 23, which is now used for these lectures, has received such additional fitting up as was necessary for the purpose. Also a new and powerful projecting lantern with a Thompson automatic regulator has been provided in order to meet the necessity for increased facilities in this direction. Thus far no attempt has been made to differentiate one course from the other, the two being alike in subject matter and treatment.

Besides much miscellaneous minor apparatus, a number of important pieces have been acquired during the past few months, of which the following are particularly worthy of notice.

For the laboratory of general physics there has been provided a new Bausch and Lomb high-grade microscope of modern pattern. This has been necessary in order to secure to a larger number of students of all courses instruction in the use of the miscroscope for exact measurements and a fuller understanding of its fundamental principles. Several of the miscroscopes of the department, excellent in their day, had become absolutely worn out from long usage by multitudes of students, besides being of patterns which in recent years have been superseded.

For the more particular use of the students of course VIII a large Schmidt & Haensch chemical spectroscope with complete attachments for photographing spectra has just been received from Germany. This will make possible the photographic study of prismatic spectra of small dispersion introductory to experiments with the grating spectroscope which constitutes a part of the required work in the optical laboratory. This laboratory has also recently acquired an Echelon of twenty plates from Petitdidier for use with the Littrow spectroscope, which will shortly be used by the senior students in physics for studying the Zeeman effect.

For immediate purposes of instruction or research in the electrical laboratory there have been purchased a Kelvin and White electrostatic voltmeter, a volt-box extending the range of the present potentiometer to 1500 volts, an Edelmann string galvanometer, a Weston standard indicating wattmeter, and a Hartmann and Braun hot-wire ammeter. It is hoped that the labora-

tory will soon be equipped with a wave-meter for measuring the length of electric waves in connection with high frequency currents and wireless telegraphy, a branch of physics which the department intends to develop more fully. To Dr. Francis H. Williams of the Corporation, we owe the gift of a powerful Ritchie induction coil.

The most important recent addition to the equipment of the electrochemical laboratory is a new vacuum electric furnace purchased from the General Electric Company. This type of furnace is of special use in investigations on high temperature equilibrium, such as have been in progress in the laboratory for some time past. It will be used largely in connection with thesis work and research. A number of new alternating current measuring instruments have also been acquired in connection with the 75 k. w. transformer installed last year.

During the past summer there has been developed in the laboratory of heat measurements much entirely novel apparatus for the study of insulating materials at low temperatures. The problems of refrigeration include one of great importance which is purely a matter of physical measurement, that is the resistance to the flow of heat offered by insulating substances. To study this problem under the actual conditions of use there has been installed a two-ton ice machine, the gift of a friend of the Institute, and a small low temperature room, very carefully insulated and so equipped with refrigerating coils that it may be maintained continuously at temperatures considerably below zero. In this room it will be possible for students to test the insulating values of the numerous materials, cork, wood, coke, sawdust, and so on, which are used for the construction of cold storage warehouses, refrigerators, etc.

There have been loaned to the laboratory recently two most interesting refrigerating machines which are quite unique and little known in this country. They are of the Audiffren enclosed-type machine in which the refrigerating substance is sulphur dioxide instead of the more common ammonia. An interesting story is told as to how this machine was invented some years ago by a French Abbé teaching physics in a somewhat remote school in France. As a result of the changed conditions of the religious schools in France the mind of the good priest became turned to more worldly affairs and he sought to develop his invention and

put it into commercial shape. The machine has been brought to its present satisfactory condition with the aid of a well-known manufacturer of engines and turbines in Paris. It looks like a large dumb-bell which as it is turned over becomes heated at one end and cooled at the other. It is understood that these machines are to be manufactured upon a very large scale and since they are self-contained and need no attendance except to furnish water and carry away the ice, it seems that they would mark a new era in our methods of cooling ice boxes, refrigerators, etc. One little machine no larger than an ordinary trunk uses about half a horse-power and makes three hundred pounds of ice a day. It is interesting in view of the recent explosion on board a French warship to note that the particular purpose of sending these machines to the Institute is to determine their adaptability for the cooling of the magazines of such vessels, it being commonly understood that powder used in the navies is more likely to be dangerous if it is kept in a warm magazine than in one that is artificially cooled.

An elaborate series of measurements of the efficiency of asbestos brake bands has been made in the laboratory during the spring and summer. The use of fibers of asbestos instead of those of wool or vegetable fiber has made it possible to operate braking machines at much higher temperatures, and a number of interesting questions as to the limits of power supply and working temperature of such fibers have been studied.

There has been added to the physical library the new edition of the Encyclopædia Britannica, in heavy paper.

Department of Mining Engineering.—Professor Richards has been absent from the Institute during the greater part of the summer. He spent about a month in the Lake Superior copper district studying the milling methods and looking after the installation of his classifying and jigging apparatus. Later he stayed a month in Denver acting as expert in an important law case.

Professor Hofman left on his European trip the first of June and returned the middle of August. He was able to visit a number of metallurgical plants abroad and returns to us full of new ideas. He also took advantage of this opportunity to visit the two leading technical schools of Germany at Aachen and at Berlin studying especially their research departments.

Professors Locke and Bugbee have been around Boston nearly all summer.

B. S. Wohlgemuth has left his position as assistant to go into practical work with the National Tube Company at Wheeling, W. Va., and his place is being filled by Mr. M. A. Grossmann of the class of 1911. There are no other changes in the instructing staff.

George A. Barnaby who has been private assistant to Professor Richards for some years is now located in Knoxville, Tenn., acting as assistant fuel inspector on the Southern Railroad.

Ralph O. Reed also private assistant to Professor Richards last winter is now in Mexico.

G. E. Goodspeed, Jr., who has been Professor Richard's private assistant for the past six months, has now joined the regular instructing staff as an assistant in the geological department.

John L. McAllen on October 1 entered upon his work as private assistant to Professor Richards. He is of the class of 1911 and has spent the summer in the West.

Changes in the laboratory have been few owing chiefly to the fact that we are so crowded that it is impossible to put in any new apparatus. The usual summer cleaning and renovating has been done. The Ball-Norton magnet has been supplied with a necessary rheostat. A motor is in process of installation for the metallographical work.

A large number of former students of the mining department have appeared during the summer,—among them are the following: H. O. Cummins, P. E. Fernald, J. H. Polhemus, H. G. Woodward, M. W. Hayward, T. F. Lennan, R. W. Lodge, F. A. Hurley, A. F. Bennett, P. C. Hopkins, E. A. Hersam, A. O. Christensen, D. Copeland, E. E. Harrington, H. B. Litchman, A. L. Hamilton, C. G. Ewing, Roy Allen, B. E. McKechnie, C. Y. Wen, T. K. Tse, F. W. Snow, Guy Ruggles, T. F. Geraghty, Warren Hastings, H. C. Plummer, F. C. Lincoln, Jos. Daniels, E. A. Holbrook, E. G. Goodwin, A. W. Wells, D. B. Myers.

The department has four students in graduate work: Dr. Walter Fraenkel, Boyd Dudley, Jr., E. M. Marshall, and W. Wanjukow.

Dr. Fraenkel received his degree at the University of Heidelberg where he afterward served as assistant in inorganic chemistry. He also has been assistant at Munich, Zurich, and

Berlin. He is with us to study our courses and methods of instruction and to get an idea of practical work on this side of the water. He wishes especially to study pyro-chemistry and when his studies are completed he plans to teach again in his home country. He is not a candidate for a degree with us.

Mr. Dudley received his master's degree at the Missouri School of Mines at Rolla, Mo., and afterward served three years as instructor in metallurgy and ore dressing under Professor Copeland, M. I. T. '03. He plans to take a master's degree with us and later a doctor's degree, making a special study of metallurgical subjects.

Mr. Marshall is a recent graduate of the Colorado School of Mines with the degree of M. E. He is a candidate for our master's degree taking advanced work in mining, metallurgy and geology.

W. Wanjukow is a graduate of the Imperial Technological Institute, Tomsk, Siberia. He has been doing research work in the metallurgical department of the Polytechnic Institute, Aachen, Germany. He comes to the Institute to study our methods of teaching and to carry on research upon some metallurgical problems.

We also have several men who have come to us this year from other colleges and who are candidates for the regular S. B. degree in mining engineering and metallurgy. Among them are Mr. Waite from Harvard; Mr. Dew from Washington and Lee; Mr. Butts from Princeton; and Mr. Beckman from Yale.

The men who were graduated in June from the mining department all succeeded in obtaining satisfactory positions within a very short time after their graduation in spite of the acknowledged quiet state of general business. We were also able to secure summer positions for such undergraduates as desired. Four men went to the Cœur d'Alene district of Idaho, two men were at Bingham, Utah, two men at Eustis, Que., two men in the coal fields of West Virginia, two men at Butte, Mont. Other men probably succeeded in securing practical work on their own account of which the department has no record.

MISCELLANEOUS CLIPPINGS

The selection of the Cambridge site for the Institute of Technology is a wise and welcome solution of the puzzling problem which has been before it for months and years. While this selection has been generally anticipated as the best possible, yet the friends of other sections have not ceased to urge their preferences. It is good news that the Tech will remain a Boston institution to the extent of retaining its Boylston Street buildings for administrative purposes. The other structures on Trinity Place and Garrison Street will be abandoned and sold. The manifold advantages of the Cambridge site, the particularly beautiful and scenic character of the surroundings, and the fine outlook that the buildings will have cannot fail to be a substantial asset to the institution. With the completion of the new subway to Cambridge, and the readjustment of surface lines which this will mean, Technology will be by no means remote from Boston and will have all the advantages of both isolation and propinquity. It has been a long and weary struggle under which the Tech trustees have labored in reaching this decision. Now, however, their struggle is at an end, with the exception of some petty legal difficulties which the city of Cambridge cannot afford to permit to stand. With these difficulties cleared away this great Massachusetts institution ought to enter into a new lease of long and deserved success and prosperity.—*Boston Transcript.*

In selecting fifty acres of land in Cambridge just across the Harvard Bridge as the site for the permanent home of the Institute of Technology the trustees of that institution appear to have made an admirable choice. The area is sufficiently large for present and future needs and the location will recommend itself because of its accessibility. It is near the city and yet sufficiently retired. Boston is sorry to lose the Institute, but since it will be in Greater Boston it will still be in the family.

A new era stretches out before Technology. She will take her traditions with her across the river, but the plant itself will be modern in every respect and college community life for her will begin for the first time. The Commonwealth this year signified an intention to foster the institution and funds are in hand, or doubtless will be forthcoming for a comprehensive arrangement of buildings. Technology's name is known the world over and now at last she is to have an adequate physical home.

The site is sufficiently removed from Harvard to be distinctive, and yet it is near enough so that if coöperation should be desirable in any degree forces could be joined easily. The beautiful Charles River Basin, with its esplanade, will be appreciated by the Technology community. The selection, in short, if not ideal is almost ideal, and that is sufficient praise.

By the way, shall it not hereafter be known as Harvard-Technology Bridge?—*Boston Globe.*

The long delay (partly occasioned by a question of price attached to various sites under consideration) in choosing a site for the new establishment of the Massachusetts Institute of Technology, comes to an end with selection of the tract of made land on the Cambridge shore of the Charles River Basin, between the two bridges. Only favorable action by the city of Cambridge, regarding the necessary closing of certain streets on the property, remains to be taken into account, and there should be no trouble on that point. It is a relief alike to the friends of the Institute, and to common curiosity, to have the problem settled at last. There will still be differences of opinion as to whether the proposed island site, in the middle of the basin, would not have been more satisfactory and more economical, but discussion of the point is superfluous in the light of the choice made.

The decision assures the basin against defacement by displeasing structures along that shore. We may assume that Technology will provide architecturally pleasing display, coupled with proper utilitarian purposes. This development of the Cambridge shore, also, should strengthen the general tone of other development in the district, and insure the basin as a spot of permanent beauty. The practical advantages for "Tech" in the site chosen, President Maclaurin makes clear. It is convenient to the North station and to Copley Square—the last being important in view of the fact that the Rogers and Walker buildings will still be made use of by the Institute for some time to come.—*Boston Advertiser.*

It may be assumed that Tech will cross the Charles, although the deal is nominally still open. Boston and Cambridge are so nearly one that no local jealousy is justified at the University City's additional claim to its title. No closer connection with Harvard, so much discussed at the time of the McKay bequest, is signified by the greater physical nearness; each institution, we are assured, will continue to cultivate its peculiar field alone. The question of tax exemption, even now a burning one in Cambridge on account of Harvard and Radcliffe and the various theological seminaries, will occur to many. But the Institute will relieve rather than aggravate the situation. For the land on which it will locate has awaited development for years and the belief is general that, under present conditions, its contributions to the city's tax coffers would always be meager.

Of interest to all will be the æsthetic result. An imposing architectural group, such as will eventually rise on its Cambridge margin, will immeasurably enhance the basin's attractiveness. It renders all the more advisable the island in the middle of the channel, as recommended by the joint board last year, since sites for boathouses and the like are no longer available on the shore. The metropolitan park commission should also be given the authority and appropriation, denied it last year, to develop the recreation resources of the parkway. Adequate treatment of its possibilities might perchance create a scene justifying Wordsworth's rhapsody on Westminster Bridge: "Earth has not anything to show more fair."—*Boston Herald.*

Professor Francis W. Chandler has been head of the architectural department of the Massachusetts Institute of Technology for twenty-three years and resigns on account of increasing deafness, to the regret not only of his fellows in the Faculty, but of the students, to whom he endeared himself by sympathetic spirit and kindly advice. The Tech architectural department was the first school of the kind in

the country and now is acknowledged to have no superior in the world save the École des Beaux Arts in Paris.

"A department of architecture in a technical school occupies a position of difficulty, inasmuch as it necessarily represents two different points of view, that of the engineer and tha of the artist. In some institutions no attempt is made to represent both sides and the department is frankly allowed to become either purely artistic or purely structural. "Here at the Institute," says Professor Sedgwick, "we are not accustomed to balk at difficulties and we have tried from the outset to recognize and to represent fairly both points of view.

"Professor Chandler has to a remarkable degree been able to combine successfully the varied interest here noted. Sympathizing with the engineer, he has always nevertheless insisted upon a due regard in architecture for pure beauty and artistic feeling, and that he has been able to hold this middle ground without loss of efficiency is perhaps the best tribute that can be paid to his professorial acumen.

"Professor Chandler ha throughout steadily supported and strengthened the ideals of scholarly achievement which form so indispensable a part of a great modern scientific school. While fostering individual taste, and especially initiative and originality, he has steadily insisted that the dull routine work of the profession be none the less faithfully accomplished. The architectural department, therefore, stands today entirely on the high level of the other departments in all those peculiarities that characterize typical Technology men.

"Coming to the Institute as Professor Chandler did from active professional life, he has always been able to impart to his associates and to his students the best form of that spirit which is so indispensable a part of professional life, and throughout his career he has stood for uncommon sense and artistic sanity. The head of a department must always be more or less to his associates and students a professional example, and it is not too much to say that those who have long looked up to Professor Chandler as a noble example of what the professional architect should be have never found their confidence or admiration misplaced."

This praise from one within the Faculty of the Institute is echoed and confirmed by no less an architectural authority than R. Clipston Sturgis, who when he learned of the proposed resignation said, "What has made Professor Chandler the leader in the instructing circles of this country is his sound common sense and perfectly good judgment. These are fundamental in architecture, in which the imaginative is needed, it is true, but it should never be a dominant characteristic. Further than this, he has been able to put his own personal impress on every man who has graduated. Those who go to Paris are likely to be dazzled by the brilliancy of the ideals and perhaps neglect the real substance, and Chandler's influence was just what was needed to balance the enthusiasm and make it a factor to most beneficial results. In the opinion of all architects the Institute under Chandler has put forth a product that is the best in the country."—*Boston Transcript.*

In retiring from the chair of architecture at the Massachusetts Institute of Technology, Professor Francis W. Chandler leaves a monumental record of work done not only for that institution but for the advancement of the art in this country.

Since he was placed in charge of that department of the Institute in 1888, he has steadily developed its scope and its purposes, until today it has no rival in the architectural field except the École des Beaux Arts of Paris. In the schools of architecture established in connection with our leading universities and colleges,

Technology men will usually be found at the head as directors. They all carry the impress of Professor Chandler's personal influence and of his clear enthusiasm for art.

It is no exaggeration to say that he holds recognition as the architectural teacher par excellence of the world.—*Boston Post.*

Prof. Gaetano Lanza, head of the department of mechanical engineering at the Massachusetts Institute of Technology, has ambitious plans for the future in the line of the erection of a large apparatus for experiments in currents of air, a work that is urgently needed in the development of the future of the aëroplane. The practicalness of Professor Lanza's plans does not need any supporting argument, it is self-evident, because the advances in methods of construction of aërial machines must depend largely on the additions to knowledge of the effects of air currents upon their planes and frames. Very little is known today about such vital matters as lift and drift of the surface upon which the wind impinges, but these items of lift and drift are exactly what ought to be known to have the constructions other than rule of thumb.

Inasmuch as the Institute has already a mass of observations on the subject, such as few other institutions in the world possess, and since the subject needs development in a larger way, Professor Lanza has had in mind the securing of means of setting up at Technology a plant that shall be adequate to the working out of problems of the wind on a scale comparable with nature.

DIGGING OUT FACTS FOR THE AIRMEN

There are three philosophical ways in which the quality and behavior of wind currents may be determined, by mounting some kind of measuring device on a railway train or an automobile, by placing it on the edge of a rapidly whirling table; or, third, by making a gale of wind by artificial means within the laboratory, or in other words, experimenting on the current of air from a blower. The methods first-named have, of course, been available for the earlier, cruder investigations but it may readily be seen that in the open air there never is a time when distracting breezes are not present; the whirling table if out of doors has the same defect, while in the laboratory it is troubled by induced currents that it has itself started, so that the final and more delicate tests must come from a controlled current which can be given known velocity and direction. There was established, therefore, in the laboratories at Tech some years ago an apparatus consisting of a blower and a square conduit leading the air to an outlet in which various conditions were established and studied. These data are most valuable so far as they go.

This bit of apparatus in the hands of the students has contributed a great deal to the present knowledge of air currents, and in other places widely scattered over the world other institutions, three or four of them in all, have installed similar devices; but today, in the needs of the practical work of aëronatation, Professor Lanza feels that what is now most necessary is the increase to practical velocities and practical surfaces in the experiments. The world is no longer to be served in this matter by foot-square targets in a tube of four feet area with a wind of ten or fifteen miles an hour; what is needed is a gale of sixty miles an hour from the mouth of a tube nine feet square, and this is just what Professor Lanza, the head of a most active depart-

ment of Technology, is trying to realize. And it needs but a small fund comparatively to install the entire outfit. In certain ways the plant will be popularly interesting, for the blower that is capable of delivering such a current is of the largest size used for the ventilation of mines, and at its intake there will be a good deal of excitement. The casual inspector will need to hold on to his hat, for small, loose articles like shawls, or handkerchiefs, or gloves will stray rapidly towards the blower and even the small boy might have difficulty in withdrawing if he should peer into the grating to see where the wind was going to; but these are details easily arranged so as to avoid untoward results. Such a device, the cost of which would hardly have bought a pamphlet at the recent Hoe sale, is pretty necessary to the development of a coming industry that is not as yet sufficiently on its feet to supply itself the funds for the experiments.

HELPING OUT THE INDUSTRIES

The close relations of the Massachusetts Institute of Technology to the problems of business men are not very well understood outside of those business circles that have need of the solutions of their problems. It was voiced with distinctness at the Technology Congress but, generally speaking, it is only occasionally that the request of such firms comes to public notice. The Edison Electric Company realizes that it is time to put on a basis of efficiency the running of the electric automobile, and accordingly it has tendered to President Maclaurin the funds with which such an investigation is to be conducted. The company does not know just what the outcome will be, for this is to be an investigation in the interests of science, but it is sufficiently sure of the ground to feel that a scientific testing of every element in the electric vehicle, the determination of its efficiency as a carrier of packages or a whizzer of the physician to his patient, should be worked out. It recognizes further the admirable facilities possessed by the Institute for just this kind of efficiency work, and despite its own facilities for investigation, it turns to the Institute as its real master in investigation methods.

In exactly the same spirit the Keith company has approached the Institute of Technology for the investigation of the egg question. It agrees to furnish a fund for research, which in the words of the letter of announcement of the proposition "shall be conducted in the most thorough and impartial manner possible." The sole condition attached to this gift is "that the results shall be published as promptly as possible." "For the purpose of such a work," writes the president of the company, "we turn naturally to the Institute of Technology."

But to come once more to the mechanical laboratories, which by the way were formerly called "shops," till Professor Lanza realized that they were just as truly laboratories for the working out of mechanical questions as are the chemical laboratories for the solution of problems in chemistry, and applied the new word "laboratories" to the most recent of these practical study rooms, those on Garrison Street. Tech was a leader in this item of nomenclature and such shops are now called laboratories all over the world. One further point should be understood, that the Institute of Technology differs from some other institutions in the land, in that it does not take work for the mere purpose of doing it. There are some excellent schools that are in the machine manufacturing business and accept contracts to furnish various kinds of constructions, the work being done by the stu-

dents for practice. It is true that the Tech men are excellent mechanics, but this is the means and not the end. They learn to construct in order that they may make for themselves the apparatus for solving the problems before them.

It would be a long story simply to list the points of close contact with mechanical business matters that the students make in the course of a single year; some of them, however, are in the forefront of recent advance or in relations in which there is an international interest. A few of these may be noted briefly, no one of which is more technical or more closely watched than the experiments with gear wheels. Toothed wheels have been known since almost prehistoric times, yet there are some questions about them that have never been satisfactorily answered. The use of them is increasing and in important ways; for example, in the differential speeds of the automobile, and as the field of the work enlarges new problems come into view.

When, therefore, at a meeting of manufacturers, the difficulties of the situation were presented, Professor Lanza suggested that it was a problem which could be best worked out in the mechanical laboratory of an institution like Tech, and, accordingly, sets of wheels have been furnished to the students by different manufacturers, each one of which has his own pet pitch, and the students during the past few months have been patiently comparing the behavior of one kind of tooth with that of another. Measuring the power delivered to the driving shaft and the amount of power transmitted by the receiving shaft, the relative efficiency of the different constructions is determined, the weak points in one system or in one application are shown, and it is expected in the end to furnish a formula for tooth-drafting that will be better than any other in the world. This research has attracted the attention of the mechanical engineering societies; the American society has openly approved of the work, while the British association has deferred the beginning of some of its important standardizing matters till the results of the investigations at Tech may be made known, intending to use these for a stepping-stone in the attack of other problems. Yet for the boys such an investigation is no poem. One who engages in scientific research learns very quickly that it is a long series of measurements, one almost like another, confining, demanding at every moment close attention and, as a whole, laborious, painstaking drudgery. But this is the kind of work that the successful engineer must undertake, and in this, more even than in other branches of the pursuit of knowledge, there is no royal road, albeit it is no small portion of the work of the engineer to make the roads smooth and easy for others.

HUNTING FOR A SATISFACTORY TELEGRAPH POLE

In the same building with the busy cogwheel investigators there is another group of students testing concrete telegraph poles. With the increasing scarcity of wood and the fact that the life of a pole imbedded in the earth and subject to such great strains, is comparatively short, there is every effort to find some substitute. Concrete offers itself and the question at once is, how is it in point of strength? To answer this question these students have been at work for some weeks with eight-foot lengths of different constructions, seeing just what they will do under the strain that it is probable they must endure in practice. Here are hollow posts, posts with reënforcement of different patterns and even solid poles. When the work is completed, there will be for the business man the story of what there may be in economy,

adaptability or serviceability in the concrete post, and it will be free to him who cares to look it up.

The room in which these experiments are conducted is worthy of a good deal of attention, for it is probably the most important destructive laboratory in the country. It is only about a quarter of a century ago when the Emory testing machine at the Watertown Arsenal was almost a wonder of the world. It could crack an egg or rend an iron beam and register the force required for either operation. It was so costly that only a government could afford to own it and when built it was the only one of its size in the world. Today the Institute owns an Emory machine of three hundred thousand pounds crushing strength, not far from half the power of the great government machine, and competent to test anything in the usual run of mechanical matters. This is, however, but one of a dozen machines that twist or crush or pull, this one with one hundred thousand pounds strength in its jaws and that one of thirty thousand pounds, so that whatever the problem, the students are amply fitted with the fundamental machinery.

The problem of concrete is one of the living ones of today, because it has, so to speak, been recently discovered. It is, of course, an adaptation of the old method of "grouting," but in a new age, with an improvement or two like the reënforcing bars, its possibilities seem boundless. But the engineer must stop and consider. When the Boston & Maine Railway inquired of the authorities that were convenient as to what the conduct of a concrete house would be on the summit of Mount Washington, it was not able to get any very definite answer. Then, again, there is always the question of cost. It is not every one who has a piece of work like the great constructions of the Panama Canal, where cost is absolutely secondary to quality. Men must live by their investments and must figure the cost and its relations to the returns. It is the lowest cost consistent with satisfactory strength that is sought. The determination of such things as this the Technology students in Professor Lanza's department have entered into with definite results already, and it is in splendid trim for the carrying forward of any special line of development. For example, in the physical laboratory there are investigations in progress to determine the action of concrete under high temperatures. Here is a material entering with phenomenal rapidity into construction work and yet practically nothing is known of its fire-resisting ability. What is known is all assumed from some circumstance, perhaps of an accidental fire, but the students of Technology are at work quietly piling up the facts that shall give it a definite rating and a place.

In a nook in the basement of the mechanical laboratory in Engineering Building A, is a sixty-five horse-power Knox automobile engine given to the laboratory by the manufacturers so that its efficiency may be tested under every possible laboratory condition, and to it Professor Riley has attached a very efficient form of water brake whereby the whole power of the engine may be taken up, if necessary, and its strength measured in this way.

ALWAYS AFTER EFFICIENCY

In every corner of this busy place there is something doing, and even on the roof, for there is a testing place for nozzles. It is not every town that is so favorably situated as Boston, where the water wasted by being exhausted into the air from steam plants may need five or six ciphers following its initial digit to express the

dollars' worth a year. Less fortunate places, where the conservation of water is a necessity, must use some form of condenser and to return the water as soon as possible to the boiler, some kind of cooling device, so that the form of nozzles as adapted to such special work is important. This has been the research of one of the students this term and he has been fortunate in devising a form of his own that is more efficient than any of its predecessors.

And besides the laboratory there is the great outside world. Technology students spend their summers on the tender of the locomotive, weighing every pound of coal, noting its effect on steam production and determining the theoretical improvements in what must ever be a most wasteful means of producing power, or on the running-board testing the cylinders. Meanwhile, Professor Peabody and his assistants of the department of naval architecture and students are performing a like service for the steamers, by a very neat recorder devised by Professor Everett, making a continuous record of every important efficiency factor in permanent form so that it may be studied later in the laboratory. This machine, tested for the first time the present school year, is now in almost constant demand by local steamship builders, for it tells them better than any of their own devices the truth about the efficiency of their productions.

Not infrequently the students of the department test the conditions of a building, as at the new Art Museum where the boilers and heating system were investigated for efficiency, and also the humidifiers, while the ventilating system of the Old Colony Trust Company's new building was also studied. At the Arena there was an investigation of the efficiency of the freezing plant, while at the Saylesville bleacheries important tests were made on the producer gas engines, which here develop several thousand horse-power. On the Edison chimneys at South Boston a series of experiments, not yet completed, is in the practically unworked field of the value of high chimneys. The trend of previous work with the chimneys at the Institute itself was towards the belief that there is no advantage in great height so far as draft is concerned, although of course some chimneys disperse noxious gases, which if discharged into the air must be at such a height as to eliminate danger to animal or vegetable life.

The short exposition of what a single department of the Massachusetts Institute of Technology is doing in the way of timely research of importance to commercial interests would in its details make an exceedingly interesting story, closely related to the manufacturing supremacy of Massachusetts, and it is also to be remembered that it is but one of a dozen active departments, each working within its own field. The physics students have a very interesting sample refrigerator which they can stuff with different kinds of packing and cool by a number of different methods; the electricians are looking into problems that relate to everyday life and light; the naval people have their sample boat, the *Froude*, to which they affix all sorts of propellers at various angles and under different conditions, so that they can tell which is to be the winning form, and the winning form is of enormous importance in the present hustle of torpedo boats, destroyers and destroyer chasers. And as to the chemical laboratories, there is a subject that at its one extremity is dealing with the ultimate nature of matter, the very foundations of purely theoretical science, and at the other is in touch with almost every business interest of our modern civilization, an important story all by itself.—John Ritchie, Jr., in *Boston Transcript.*

ment of the sanitary idea as indicated by the municipalization of water works, economic and sanitary efficiency of water works, protection of water supplies as a conservation of natural resources, the regeneration of a spoiled water-shed, the interdependence of town and country, and efficiency of filtration. On many of these subjects the information given is disjointed, but is nevertheless instructive. Particular emphasis is placed upon the necessity of collecting water from a clean gathering ground and storing it in clean reservoirs. The uses of the chemical analysis of water are described at length, but one of the rather surprising features of the book is the conspicuous absence of references to bacteria and their importance in water supplies.

Two chapters are devoted to the disposal of wastes, including garbage, sewage and wastes from manufacturing establishments. The effect of dilution is considered at some length, but little space is devoted to works for the purification of sewage.

The first part of the book closes with a chapter on the education and position of the sanitary engineer in the progress of modern sanitation, in which emphasis is placed on the need of efficiency in the enforcement of health laws.

"The mechanical basis of modern life must come to the aid of moral and personal influence. It is not enough to tell men to do the right thing—they must be fenced in from the wrong thing. For this reason the public service engineer is the emerging leader in community welfare."

Part II comprises a series of laboratory exercises and tests on the inspection of ventilation and the analysis of water and sewage. These notes are based on exercises prepared for the fourth-year sanitary engineering students at the Massachusetts Institute of Technology, where Mrs. Richards was for so many years an important member of the Faculty.—G. C. Whipple in *Science*.

The Design of Static Transformers. By H. M. Hobart, '89. New York, D. Van Nostrand Company, 1911. 174 pages, 101 illus. Price, $2.00.

Gisbert Kapp and Prof. J. A. Fleming supplied the profession a dozen years ago with the earliest treatises on the design, efficiency and operation of transformers. Though there appeared within that period a fairly extensive literature on the subject, mainly in the form of articles and papers published in technical journals, the number of works dealing more or less fully with one or other aspect of the subject is but small. In the present volume Mr. Hobart supplies a much-needed manual on the design, construction and regulation of transformers of various types. After a lengthy introduction, in which matters of general interest are touched upon, the author adds a bibliography of useful papers which may be read with understanding and profit by the student after perusing the present short treatise. It is to be regretted that the author saw fit to qualify the apparatus treated by the word "static," which word carries one back to the days of unscientific nomenclature long since revised.—*Electrical World*.

NEWS FROM THE CLASSES

1868.

PROF. ROBERT H. RICHARDS, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

On July 11 the secretary left for Houghton, Mich., where he remained until August 15 working upon concentrating machinery in one of the large mills. He met R. E. Sampson, '07, and they had a good deal of fun together. He went to Denver, August 22, where he acted as expert in some law cases. While at Denver he dined with W. H. Bunce, '84, and Marden Hayward, '96, Crichton, '10, and Damon, '05. The great event was the dinner which was given to him by W. H. Bunce, '84, F. T. Snyder, '91, John Donaldson, '07, Frank E. Shepard, '87, Elmer W. Wiggins, '05, Edward S. Wiard, '99, Sydney S. Emery, '93, and W. S. Trask, Jr., '06. The dinner was given at the University Club at Denver and was a very jolly one. The Tech men present talked over old times as well as future plans for the society, and it is hoped that it will be one of several reunions of the Rocky Mountain Club of Denver during the year.—Prof. Robert H. Richards attended the quarter centennial of the Michigan College of Mines at Hancock, Mich., August 8 to 11, representing the Institute of Technology, although unofficially present. The reception committee was very attentive to the representative of the Institute. The exercises were of an elaborate nature and extremely interesting.

1876.

JOHN R. FREEMAN, *Sec.*, 815 Banigan Building, Providence, R. I.

Seven members of the class of '76 (Copeland, Hodgdon, Wood, Baldwin, Pritchard, Galloupe, and Freeman) were able to leave business and other cares on Saturday, June 10, at the invitation of Charles T. Main, to spend a week end and some days more at his bungalow at Ashland, N. H.—Letters were received from many, telling what each had been up to since last heard from and recounting cheerful yesterdays. No technical examinations were held for showing how much skill had been gained or lost in the experiences of the thirty-five years since graduation, except a few in applied mechanics, in which one and then another demonstrated his fitness at the bucksaw and the pump handle, while

the others stood around as time-keepers and cheered him on.—After all of the stories of the old days and the recounting of what had been going on since, the general verdict was that thirty-five years is not so very long after all, and that we were all of us still young.—The secretary has to record the death of two of the best beloved members of the class:

Charles P. Shillaber

Charles P. Shillaber died at his home at Sherbourn, Mass., on Tuesday, July 11, after a long illness. It will be remembered that frail health in his early years caused him to leave the Institute, so that he did not graduate with the class. After leaving the Institute he spent several years in travel, going to the Pacific Coast, the Sandwich Islands and other interesting localities on the Pacific. Restored to health, he returned to Boston and entered upon a very successful business career, and always found time to attend the reunions of the class when he was in this part of the country, and always brought with him a cheerfulness and optimism which will be a pleasant memory to his friends.

George C. Avery

George C. Avery withdrew from the Institute at the end of the second year to take part in his father's business, the manufacture of agricultural implements, in Louisville, Ky. In course of time he succeeded to the presidency and general management of the Avery Plow Company, one of the best known concerns in that line manufacturing particularly with a view to the Southern agricultural conditions. The secretary of the class has very pleasant memories of Mr. Avery's Kentucky home and has had the pleasure of occasional visits in recent years, whenever Mr. Avery's business called him to this part of the country. Those of us who remember him as one of the most athletic figures among our group of thirty-seven years ago will find it hard to picture him as suffering from the ill health which from time to time cut down his business activities and compelled him to seek rest abroad. Within the past few years he had been busy with a complete rebuilding of the company's works, substantially everything being new and with all details for efficiency studied out along the latest lines. The Kentucky air had bred in him a courtesy and kindliness of manner which had not become impaired by an aggressive business life.

1877.

Richard A. Hale, *Sec.*, Lawrence, Mass.

H. D. Hibbard, '77, Plainfield, N. J., was married August 16, 1911, to Mrs. Sallie Ames Brooks of Plainfield. They have

returned from a trip to California by the way of the Canadian Rockies and will continue to reside in Plainfield.—George W. Kittredge and family have been spending a month in the West, visiting the Yellowstone Park and Canadian Rockies and have now returned east.

W. E. CHAMBERLIN

W. E. Chamberlin, '77, died suddenly at Manchester, Mass., August 6, 1911. He had been an invalid for many years. He was very prominent in the architectural profession and had designed and built many prominent buildings in Cambridge.

1881.

FRANK E. CAME, *Sec.*, Metcalfe Apartments, Westmount, Quebec, P. Q.

FRANK H. BRIGGS, *Asst. Sec.*, 22 High Street, Boston, Mass.

Frank Darlington has spent the summer as usual at his Hyannisport residence, and had his granddaughter there for part of the summer. He was a constant attendant at the Barnstable fair where Major Briggs held forth in athletics.—Bill Revere is now located at Portsmouth with the Roland M. Baker Leather Company, with whom he has been associated for some years.—Hans Allen has been at Walpole off and on during the summer.

1882.

WALTER BRADLEE SNOW, *Sec.*, 170 Summer Street, Boston, Mass.

Mr. William H. V. Rosing, who has been for some years mechanical engineer for the Missouri Pacific Railway Co., with headquarters at St. Louis, has recently accepted the position of assistant to the vice-president of the St. Louis and San Francisco Railroad Company, with headquarters in the Frisco Building, St. Louis, Mo.

HOWARD V. FROST.

The secretary has to record the death of Howard V. Frost, which occurred at Chicago, June 27. The funeral services were held at Arlington, Mass.

1884.

HARRY W. TYLER, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

Mellen has recently become secretary of "The Beacon"—a newly incorporated department store in Central Square, Cambridge, which is expected by the local press to give a great and

welcome impetus to the mercantile development of Cambridge. "It may be that the coming of a new department store with abundant capital and superior facilities for doing business will bring about a modification of business methods on the part of some of our existing stores. Our merchants have done wonders during the past few years in the way of meeting Boston competition and have offered both service and values that have resulted in a remarkable growth of the mercantile interests of Cambridge. The introduction of a new element of competition in this city must result in still further changes for the better, with corresponding benefit to the purchasing public and to the merchants themselves. Accordingly, we welcome Cambridge's latest business enterprise and assure it of our hearty coöperation in any campaign for the building up of the city."—*Cambridge Chronicle.*—P. L. Fong, formerly in the Bureau of Agriculture, Industry and Commerce, Mukden, is now of the chief engineer department, Imperial Peking-Kalgan Railway, Changsui Extension, at Kalgan, North China. He reports that K. Y. Kwong has been transferred from the Yueh-Han Railway Company to this line as chief engineer.

A recent issue of the *Richmond Virginian* contains the following:—

General T. Coleman duPont, the millionaire president of the Powder Trust, having a few surplus dollars to disburse and casting about for a beneficent direction in which to apply them for the public good, displays unusual originality and a remarkable discrimination in the distribution of them. He passes by the common opportunities of philanthropy; turns a deaf ear to the entreaties of their representatives and blazes a way for himself through an untrodden realm of public benefaction. He is applying $2,000,000 to the construction of a great highway, 100 miles long and 300 feet wide from the northern to the southern limits of Delaware. It will be one of the finest boulevards in the world. Hereafter, as Carnegie is known as the patron of libraries, Rockefeller of education and Morgan of ecclesiastical institutions, so duPont will be known as the patron of good roads. He is constructing a monument for himself out of native soil a hundred miles long. The gift is as valuable as it is unique. Really it would be difficult to conceive of a national benefaction of greater and more enduring value. Thousands of square miles of his state with their inhabitants will be brought under the direct benefits of this novel gift. The development of the whole state will be furthered and the comfort and convenience and prosperity of thousands of people will be directly served by the building of this highway.

1885.

I. W. Litchfield, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

During the summer the secretary ran across Fred E. Bedlow, who has modestly concealed his whereabouts in Dallas, Texas, for a number of years, coming to Boston surreptitiously during the summer for a brief respite from the heat and to keep the recollection of Duxbury clams fresh in his memory. He looks youthful and well and maintains his interest in '85, although he cannot meet with us as he is never here in winter time. He has

one daughter at school in Dallas, and another has been attending Smith College for two years.—A letter from Martin received this fall states that he is now located at 8 Pine Street, Glen Falls, N. Y., having taken a position in the management office of the International Paper Company. He is pleasantly located and likes his new work, although he says it is rather hard to be so far away from Boston.—S. A. Parsons has changed his address from Boston to 106 Agricultural Bank Building, Pittsfield, Mass., and Frank Cutter has moved from Los Angeles to Corning, Cal.—If you want to shake hands with Charlie Allen step into the State Board of Education rooms in the Ford Building, Boston.—Bob Richardson came on to New York in September and had a clandestine meeting with Dick Pierce and Charles Richards. It is understood that this meeting had something to do with the 30th anniversary of the class of '85 to be held at Squam Lake in 1915. It is to be known as the Squam Lake 1915 movement.—Tracy Lyon, who has for a number of years directed the manufacturing of the Westinghouse Electric & Manufacturing Company at Pittsburgh, has taken charge of the manufacturing operations of the General Motors Company of Detroit. Lyon has had unusual experience in the science of management and in handling men, having passed through a very broad railroad experience on the Chicago & Great Western Railroad, where by successive steps he passed from a member of the engineering corps to assistant general manager, through the offices of superintendent of motive power and general superintendent. His experience with the Westinghouse Company was an important supplement to the railroad work and he is particularly well equipped to take charge of such a complicated and diversified industry as that with which he has just become connected.—Every man in the class will be glad to know that Alex. McKim has recently been appointed inspector of docks and dams of the Conservation Commission of New York State. This appointment was made in order to prevent a disaster similar to that which occurred at Austin, Pa. McKim will begin a thorough probe into the condition of the dams and reservoirs throughout the state of New York. He has held the position of engineer, New York City Department of Docks and is, therefore, well equipped for his new work. After leaving the Institute he took post-graduate courses at Columbia University and Technische Hochschule, Berlin. There are over five hundred dams in the state which will have to be inspected as soon as possible and McKim is likely to be a busy man for some months.—Pickernell has moved from Newton to Englewood, N. J., so as to be nearer the center of operations in New York city. For a number of years he has been obliged to travel a great deal, so that his classmates have seen but very little of him.—Morris Wilder spent the summer in Biddeford Pool, Me., but was unable to evade the secretary as he passed through Boston. Morris has two boys,

one at the Choate School in Connecticut preparing for college and a younger one who is attending high school in Florida.—Oakes Ames is just taking a real vacation for once in his life, having spent two months on a trip to the coast partly on business and partly for pleasure.—Morss spent the early part of the summer perspiring over the job of selecting a site for the Institute. Later on he joined his family in Europe and spent a good part of his time flying around in aëroplanes. Every member of the family, except the youngest, went up several times and it is commonly understood that he is thinking seriously of purchasing an aëroplane to take the place of the old Stanley car of unhappy memory, which he has nevertheless fondly cherished in his heart ever since, although it has been supplanted by two Whites, and one or two Pierce Arrows. During the latter part of the summer when any one said "site" to Ev he went right up into the air.—In addition to Homer's many duties he still finds time to lecture twice a week to the architects of the Institute.

1887.

EDWARD G. THOMAS, *Sec.*, Kewanee, Ill.

W. S. Hadaway, Jr., who has specialized for many years on applications of electric heating to industrial purposes will have entire charge of a new factory which the Cutler Hammer Mfg. Co. are building at 144th Street and Southern Boulevard, New York City. The plant will be entirely given up to the manufacture of appliances for utilizing electric heat in manufacturing work.

1888.

WILLIAM G. SNOW, *Sec.*, 24 Milk Street, Boston, Mass.

Charles A. Stone has returned from abroad after more than a year's absence.—Arthur T. Bradlee is recovering from a broken leg, the accident occurring during a game of tennis.—B. R. T. Collins has completed a report on the power and mechanical equipment in the Amoskeag Mills, Manchester, N. H.

1889.

WALTER H. KILHAM, *Sec.*, 9 Park Street, Boston, Mass.

The firm of Mauran, Russell & Crowell has been formed to take over the business of Mauran & Russell, architects. They will have offices in St. Louis, Houston and Dallas. John Lawrence Mauran of '89 is the head of this firm.—The address of President Hobbs of the National Association of Cotton Manufacturers at their meeting of September, 1911, is an authoritative

and convincing document.—Fiske has gotten out a most interesting and instructive booklet entitled "The Cost of a House"; being a comparison between brick, wood, cement and hollow block construction. Besides being of great use to prospective house builders, the book will be of value in advancing the use of incombustible house construction and reducing the too prevalent American fire loss.—Williston now has his work in the new Wentworth Institute at Boston well under way, the initial group of buildings being now complete. The success of the project may be estimated by the fact that before the school opened over 550 applications were received. The aim of the school is to teach trades and to train young men to be foremen and superintendents in building construction and in manufacturing industries.—Bliss has been re-nominated for lieutenant governor of Rhode Island.

1890.

GEORGE L. GILMORE, *Sec.*, Lexington, Mass.

Batchelder Brothers of which J. L. Batchelder, Jr., is the senior member, suffered a heavy fire loss on September 13 when one of their big docks in Boston was destroyed where they had 50,000 tons of coal.—In July Hayden took a two weeks' yachting cruise off Newfoundland and the coast of Labrador.—Francis W. Dunbar's address is 53 West Jackson Boulevard, Chicago.—H. L. Noyes is at Union Street, Niagara Falls.—James B. Seager is with the Seager Engine Works at Lansing, Mich.—George C. Osborn's address is now Marble, Gunnison, Col.—C. G. Noyes's address is 211 Fairmount Avenue, Hyde Park, Mass.—J. B. Baker is at 558 West 158th Street, New York, N. Y.—Rev. George F. Weld has returned to The Rectory, Hingham, Mass.—C. W. Sherman is principal assistant engineer with Metcalf & Eddy whose headquarters are at 14 Beacon Street, Boston, Mass. During August and September Sherman was temporarily in charge of the Chicago office in the Harris Trust Building, devoting his entire attention to work in the West, where the firm is attending particularly to water works, water production, sewerage and sewage disposal works, having general management of such plants and acting as expert advisers to the managers.—The marriage is announced of Frederick W. Swanton and Lillian Frances Boylen on September 14.

1891.

HOWARD C. FORBES, *Sec.*, 88 Broad Street, Boston, Mass.

Morris Knowles has been chosen director of the department of sanitary engineering and public health, in the school of engineering at the University of Pittsburgh. This course will be laid out under

the direction of Knowles to coöperate with the medical school of the university and the departments of health of the city and state. Under the coöperative system in operation at the school of engineering, the students will receive a year's practical work during the course. It is proposed under his direction to develop one of the most advanced courses in sanitation and public health in the country. Knowles, since leaving this city, has had wonderful success in his chosen occupation. Several large cities and towns secured him to construct sanitary departments for them and the United States Steel Company honored him by awarding him an enormous engineering contract which called for the expenditure of over a million dollars. He also was the designer and supervised the construction of the filtering system of Lawrence, Mass.

1893.

FREDERIC HAROLD FAY, *Sec.*, 60 City Hall, Boston, Mass.
FREDERIC H. KEYES, *Asst. Sec.*, 88 Broad Street, Boston, Mass.

William T. Barnes has recently gone to Chicago to take charge of the Chicago office of Metcalf & Eddy, consulting engineers, Boston, with whom he has been associated for many years. His new address is room 1824, Harris Trust Building, Chicago.—Maurice B. Biscoe, of Course IV, who opened an office for the practice of architecture in Denver about five years ago, surprised a number of his friends in Boston by calling on them recently. This was the first time that Biscoe had been east since he went out to Denver; and while he likes the location, he seemed quite pleased to get a glimpse of the salt water. Other Tech men from Denver report that Biscoe's practice in the city is extensive and that he has done some very creditable professional work there, particularly on some of Denver's fine residences.—Grosvenor Tarbell Blood, former president of the class and Miss Elsie Louise Anderson, daughter of Mr. Frederick W. Anderson, were married in Trinity Church at Brick Church, New Jersey, on October 14. Blood is an electrical engineer with the American Telephone & Telegraph Company, 15 Dey Street, New York City.—H. N. Dawes has recently returned from an extended trip west as far as Denver. On the way out he stopped at most of the principal cities, where he had opportunity to play his favorite game of golf. In Denver he had a very pleasant visit with M. B. Biscoe, '93. He returned via steamer from New Orleans to New York, and was away from Boston about a month.—George B. Glidden, president of the class, who has been an active worker in alumni affairs for many years, has been honored by nomination to the executive committee of the Alumni Association for the next two years.—Oren E. Parks, for many years town engineer of Westfield, Mass., has resigned to take a position with R. D. Gillett who has a contract

for the construction of the Hampden Railroad.—William R. Copeland has resigned as chemist in charge of the water purification plant at Columbus, Ohio, and on October 1 began service with the Metropolitan Sewerage Commission of New York (17 Battery Place, New York City) where he will have the title of chemist. He will have charge of investigations which are being made by the commission to throw light on the capacity of New York Harbor to assimilate sewage without offense. Copeland is a graduate of Harvard and took a special course in biology at Tech with '93. From 1893 to 1897 he was connected with the sewage experiment station at Lawrence, Mass., where for a year he was in charge of the biological laboratory, for the next two years he was in charge of the experimental water filtration plant at Pittsburgh and later was in charge of the biological work at the Spring Garden Testing Station of the Bureau of Water in Philadelphia. In 1905 he was bacteriologist at the sewage testing station at Columbus, then for three years assistant engineer in the Bureau of Filtration at Pittsburgh, returning to Columbus to the position stated above.—*The Tech*, the student daily paper, in its issue of October 25, 1911, contained the following announcement of the promotion of Spofford to the position of head of the department of civil engineering: "President Maclaurin announced this morning the action of the executive committee in the appointment of Professor C. M. Spofford to be head of the department of civil engineering. Three years ago, at the time when Professor Swain went from the head of this department to a similar position at Harvard University, it was deemed best to divide the responsibilities between three men. Professor C. Frank Allen was made the representative in relation to the Corporation of the Institute, Professor Spofford in relation to the Faculty, and Professor Dwight Porter in relation to sanitary engineering. The present change comes from the wish and request of Professor Allen, senior member of the department, to be relieved of his portion of the executive duties.

"So far as the courses are concerned there will be no changes resulting from this appointment. The work of the department will be modified in consequence of the opening of the new Summer Civil Engineering School at East Machias, Me. Because of this fact there will be opportunity and facilities to do more consecutively much of the practical work of surveying and hydraulic and railway engineering.

"Professor Spofford in taking official charge of the department stated in a personal interview this morning that it is in an extremely flourishing condition. It ranks as the highest school of its kind in the country, and has started the year with a larger number of students, more particularly in the fourth year and graduate courses, than has ever been the case before. The problem of sufficient room for the students is a serious one, so that for this department the moving to other buildings is a pressing need.

"Professor Spofford, the new department head, is a Massachusetts man, who graduated from the Institute in 1893, taking a post-graduate course the following year. For some time thereafter he was employed with the Phoenix Bridge Company as draughtsman, returning to Tech as assistant in the civil department in 1896, followed by six years as instructor and two years as assistant professor. He was then called to the chair of civil engineering at Brooklyn Polytechnic Institute, where he remained till Professor Swain went to Harvard, at which time he returned to the Institute as Hayward professor of civil engineering. In addition to Professor Spofford's early experience in bridge design he has been interested in several interesting pieces of engineering work. He was retained in the examination of the strength of the Blackwell's Island Bridge. He is the author of the 'Theory of Structures,' in use at the Institute and other technical schools. He is a member of the American Society of Civil Engineers, Boston Society of Civil Engineers, National Association of Cement Users and several other important societies."

H. E. Weeks has entered into a partnership with F. R. Walker, '00. Weeks has been a practicing architect for over twenty years, and during the last few years has been head draftsman in the office of J. Milton Dyer. Before going to Cleveland he completed one of the largest summer hotels in the Berkshire Mountains, and since going to Cleveland has been identified with many large works. The new firm's offices are in the Euclid Building, 1900 Euclid Avenue.

1894.

PROF. S. C. PRESCOTT, *Sec.*, MASS. INST. of TECH., BOSTON, Mass.

During the past few months there have appeared a number of volumes by members of the class, some of which have excited most favorable comment from the reviewers.—Abbot has brought out a work dealing with astro-physics and presenting many new theories of importance to astronomers and those who are interested in the physics of planetary systems, while Fowle who is associated with Abbot has brought out a new edition of "Physical tables and Standards" which is an important contribution to this class of scientific literature.—H. N. Parker has, through the Geological Survey, published a volume of 375 pages on the quality of the water supply of Kansas which presents the results of an extended investigation conducted with the Kansas State Board of Health to determine the quality of the water supplies of the state. This report deals with the geologic features of the state as well as with the question of sanitary condition and gives very much valuable information in tables showing the relation between these two subjects.—Howes has published a volume dealing with the postage stamp issues of the Dominion of Canada which is probably the most complete work of this subject which has ever been brought out. A copy

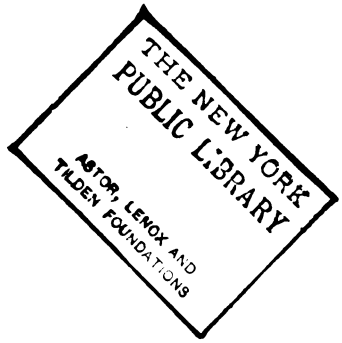
of it was sent to King George and Howes is the proud possessor of a letter from His Majesty acknowledging its receipt.—During the summer many of the members of the class have taken extended travels but not all have been good enough to notify the secretary as have a few.—Guy Lowell was abroad sailing his yacht in the German races and the newspapers gave frequent accounts of his interviews with Kaiser Wilhelm.—Mason Chace attended the international meeting of Marine Engineers and Naval Architects at London, and then spent some time in Paris; a postal from him dated August 11 said, "I hope everything with you is going along well. I have been enjoying a few weeks in Paris. Yesterday had a flight with Farman at Bac, it was great. Best regards and wishes." The members of the class need not be surprised if they see him competing with Ovington, 1904, in aërial performances and in the carrying of the mail, although it would be more in Chace's line to develop a combination airship and submarine to be used in case of war.—McKibben took a long journey to the westward and wrote from Glacier, B. C., under date of August 14 that he was having the first vacation in over twelve years, visited the Grand Canyon, Arizona, Yosemite Valley and Alaska, was then in the Canadian Rockies and had been climbing upon and under the glacier and was going to Yellowstone Park. Had met former students in many places, "one in Spokane, one in Ketchikan, Alaska, and one on the train yesterday." It is impossible for an Institute professor or one who has taught for years at the Institute to take a journey through the West without encountering many of the men whom he knew as students at Tech.—Schiertz while waiting for conditions to become favorable to estimating on large smelting plants in Ecuador is engaged in putting up a copper smelter in Pennsylvania.—H. N. Parker has recently gone to the University of Illinois to take charge, temporarily at least, of the department of city milk supply.—The general information in regard to the class as possessed by the secretary is somewhat smaller than usual at this time of year because of a rather extended attack of malaria to which he was subjected during the summer. He would urge upon all members of the class to send from time to time a postal giving information as to their whereabouts and interesting doings.

The class babies have been increased in number by the appearance of sons in the families of H. W. Gardner and S. C. Prescott, and a daughter in the family of C. A. Howes. Both young Gardner and young Prescott are slated for the class of 1932 at the Institute.

1895.

GEORGE A. ROCKWELL, *Sec.*, 101 Tremont Street, Boston, Mass.

The class will be interested to hear that John Williamson Cooke and Mrs. Kate Frances Anthony were married on June 21, 1911,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Partridge. He apparently has a subsidized press and works it to the limit. The *Boston Sunday Post* a while ago contained a long article entitled "Kite Flying is Clergyman's Cure for Headache" and had a cut of Dr. Partridge with his latest box kite. The story of his past life is given and he is further quoted as follows:

> In kite constructing and kite flying I find a favorite diversion which stands me in good stead as a needed change from the hard mental grind of strictly pastoral duties. For the headaches brought on by overwork and too close application to one's study there is no cure in my estimation quite equal to kite flying.

Later on in the *Transcript* is a story of the rescue of Partridge at the annual trial of life saving apparatus at Marblehead. It seems that he was one of the volunteers who offered to ride in the breeches buoy and who received a ducking on account of it. Partridge was not in any danger on the Island; his principal menace lay in the attempts for his salvation, for he had hardly started his career for the shore when the life line sagged and he was dragged the rest of the way through water that at times nearly reached his neck. Partridge was game, however, and putting on dry clothes returned to the scene of activity and was again "rescued" in the afternoon. The latest item regarding him was that he had offered his resignation from St. Michael's Rectory at Marblehead but had found the pressure so strong that he had been forced to withdraw it.—Johnny Rockwell has been spending his annual vacation in the mountains of Tennessee as usual.

The following wedding announcement has been received: Mr. and Mrs. Elba Frank Horne have the honor to announce the marriage of their daughter, Mabel Phylinda, to Mr. Henry Docker Jackson on Thursday, the twelfth day of October, nineteen hundred and eleven, Concord, New Hampshire. Mr. and Mrs. Jackson will be at home after January 1st at 39 Albion St., Medford, Mass. Jackson deserves the best wishes of his classmates. He probably enjoys the unique distinction of being a member of three classes and of paying his regular dues in each of them. His is a fine example for those who are members of only one class and pay their dues in none.

1897.

JOHN ARTHUR COLLINS, *Sec.*, 67 Thorndyke Street, Lawrence, Mass.

Henry D. Jackson was married on October 12 to Miss Mabel P. Horne, of Concord, N. H. The wedding was attended by a number of Mr. Jackson's Technology friends. Mr. and Mrs. Jackson returned from their wedding trip about the first of November and will be at home after January first, at 39 Albion Street, Medford, Mass.

at Waltham, Mass.—Rudolph Hering and John H. Gregory, members of American Society of Civil Engineers, have formed a partnership as consulting engineers and sanitary experts. Gregory is a graduate of Massachusetts Institute of Technology, class of 1895, and has been up to the present, engineer for the Metropolitan Sewerage Commission of New York.

The following changes of addresses are noted: Oscar C. Child, 261 Broadway, New York, N. Y.—William E. Davis, Jr., 718 East 35th Street, Flatbush, Brooklyn, N. Y.—Capt. H. C. Denson, U. S. S. *Pathfinder*, C. & G. Survey Office, Manila, P. I.—Gerard H. Matthes, 117 East Jefferson Street, Colorado Springs, Col.—E. H. Huxley, 194 Chambers Street, New York, N. Y.—Caroline H. Garland, 65 Silver Street, Dover, N. H.—Alfred F. Shurrocks, 34 Wilcox Building, Providence, R. I.—Edward E. Denison, Cumberland Club, Portland, Me.—B. C. Donham has resigned from J. G. White & Company, Inc., where he has been employed for the past three years, and is now engaged in private practice under the name of B. C. Donham & Company, 52 Broadway, New York City. His company will take up management, engineering and construction work. It starts out under favorable auspices with the management of a large land and irrigation company operating in Nebraska, where water rights are being developed to cover 80,000 acres of land. Donham's experience has covered the construction of important works in the United States and the Orient. He was for a number of years chief engineer of a large engineering and contracting firm in Korea, and designed and constructed the first water works system and the first modern electric plant in that country. The water supply of the city of Seoul, population over 200,000, was formerly entirely from wells. The sewerage of the city consists of open drains, and frequently the sewer was separated from the well by a loose rubble wall, the interstices being sufficiently open to prevent the well from becoming dry.

1896.

PROF. CHARLES E. LOCKE, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The secretary is sorry to report very little doing since the July issue of the REVIEW.—John Tilley, Charlie Lawrence, and H. C. Stevens were called upon when the secretary was in New York in August, but they had no news to report.—Professor Jacobs was down from Burlington the latter part of August and made a brief call at the Institute.—Billy Anderson is reported to have returned safely from Japan. He sailed from Vancouver early in July on the *Empress of China* which was wrecked just before reaching Yokohama. Billy fortunately escaped without loss. —The only man who is able to supply a lot of information is

MEMENTOS OF THE FIELD DAY OF THE CLASS OF 1903

At the Vesper Country Club, Lowell, Mass., June 30, 1911

C. B. Cluff, care of N. K. Fairbank Company, Chicago, Ill.—W. M. Corse, 46 Clarendon Place, Buffalo, N. Y.—James B. Ellery, 955 Grand Avenue, Chicago, Ill.—Frank F. Fowle, 140 South Dearborn Street, Chicago, Ill.—Everett E. Goodell, 128 Cedar Street, Springfield, Mass.—Lyman P. Hapgood, P. O. Box 253, Jamestown, N. Y.—Ross Hasbrouck, 133 12th Street, Long Island City, N. Y.—F. H. Lathrop, Watson, Oregon.—W. H. Mandeville, Ashland, Ohio.—W. Scott Matheson, 3030 63d Street, Seattle, Wash.—C. L. Morgan, The Lansden Company, 54 Lackawanna Avenue, Newark, N. J.—L. A. Newell, 2205 Eudora Street, Denver, Colo.—M. F. Richardson, Peck, Stow & Wilcox Company, Southington, Conn.—Avery Robinson, Keller Building, Louisville, Ky.—Albert W. Tucker, care of Union Copper Company, Gold Hill, N. C.

1900.

INGERSOLL BOWDITCH. RICHARD WASTCOAT.
GEORGE C. GIBBS. PERCY R. ZIEGLER.
N. J. NEALL, *Sec.*, 12 Pearl Street, Boston, Mass.

Seven choice and rare spirits of the class of 1900 attended its annual outing which was held again this year at Marblehead. These were Bowditch, Draper, Leary, Neall, Reardon, Wedlock and Wentworth. As worthy representatives of the class, they enjoyed themselves to the limit of human capacity, if not beyond. Conditions were perfect; good company and good weather. The sail in the afternoon was in clear sunlight and under a fresh breeze; and the dinner, at the Corinthian Yacht Club, was even more bright and genial. Every man had a good account to give of himself. Wedlock and Wentworth both are still in the U. S. Navy Yard at Charlestown, Wedlock being in charge of construction ashore; Wentworth dealing with construction afloat. Wentworth also has much to tell about crude-oil engines and babies; and his inventive and creative faculties have in addition led him into the popular field of aviation, where he has ideas concerning the gyroscopic control of aëroplanes;—Reardon is with the General Electric Company at Lynn;—Bowditch is managing trusts (not the kind that would involve him in controversies with Attorney General Wickersham);—Draper (of old Course IX of blessed memory) is practicing law in Boston; and Neall is a busy and prosperous engineer, who has been spending his summer week-ends sailing and otherwise at the aforesaid Corinthian Yacht Club. Messages were received from A. S. Merrill, G. W. Emery, Chester A. Richardson and Lawrence S. Smith, expressing regret at enforced absence from the meeting and wishing the class a felicitous occasion. It was also reported that Gibbs, now an Episcopal clergyman, is located at Tulsa, Oklahoma. The Boston contingent of the class regrets that

Gibbs is so far away, as he has been a most valued attendant at class affairs.—E. H. Davis, professor at Purdue University and registrar of that institution, announces his marriage to Miss Edith Rebecca Appleby. Davis is doing exceptionally good work, it is reported, and the class congratulates him upon both his professional and matrimonial success.—An account of Leary's doings has been omitted thus far because they need a paragraph or rather a whole evening's talk for proper narration. From 1902–1905, he was mining at Spangler, Pennsylvania, which was rough and interesting; but more recently, from May until December, 1910, he was surveying in the Allegash and Chesuncook region, north of Moosehead Lake, Maine. He was in charge of a party of engineers, running the line for a proposed railway. Leary has been induced to have slides made from photographs taken in the woods and has promised to give the class a talk at an early winter meeting. This is an advance notice of our first monthly meeting of the season, the exact date for which has not yet been set. —Dick Wastcoat made a call on Bowditch and reported that he was doing a very good business. He is still very much interested in military matters and as company quartermaster sergeant in the Coast Artillery did his share last summer in seeing that the men of his company were properly taken care of.—*The Engineering News* has published an article about an accident to the roof of one of the buildings being built in Winnipeg by the George H. Archibald Company. Everybody remembers Archibald, especially those who went to Summer School at Cherryfield. Fortunately the accident was not serious.—Ziegler had an exhibition of dairy machinery and supplies at the Industrial Exposition at the Mechanics Building. He had eight cows which he used to show off his milking machines.—Frank R. Walker, who has spent the last seven years as head designer in the office of J. Milton Dyer, Cleveland, Ohio, has formed a partnership with H. E. Weeks, '93, with offices at 1900 Euclid Avenue. While with Architect Dyer, Walker aided largely in the designing of the new Cleveland City Hall, the First National Bank and the Athletic Club. After leaving Boston, Walker studied in New York, and later in Paris and Italy.—A small book of one hundred and thirteen pages, of vital importance to 1900 men, remains to be reviewed: *Massachusetts Institute of Technology, First Decennial Record of the Class of 1900*, published by the class. It tells what the men who "worked and slaved before they shaved" back in the years 1896–1900 are doing now that they are "passing thirty." It is a work with a thrill on each sheet and maintains its lively interest from G. O. Adams on the first page to Percy Rolfe Ziegler on the last. Price, one dollar, and as much more as the purchaser wishes to pay. (Some have considered it cheap at ten dollars.) Special notices of this publication will be sent to every member.

Elwin H. Dimock

News of the death of Elwin H. Dimock, Course II, has been received. In 1908, after several years of active business life, Dimock entered upon a course of study for the ministry. Until 1910 he was in the Newton Theological Institute and in the summer of 1910 he preached in Nova Scotia. Last fall he entered Colgate College for a finishing course, and studied throughout the first semester, although he had already become afflicted with tuberculosis of the larynx. He died at Hamilton, N. Y., on April 6, 1911. The class expresses its sincerest sympathy to his family and particularly to Mrs. Dimock, his widow.

1901.

Robert L. Williams, *Sec.*, 154 Magazine Street, Cambridge, Mass.

The first decennial outing of the class was held Saturday, June 24th, at Nantasket Beach. Although our numbers were few we did not lack in enthusiasm and fun. It was a fine afternoon for bathing and afterwards we took in Paragon Park and incidentally a shore dinner. The regular annual meeting was called to order on the beach and the following officers elected for the ensuing year: President, Preston Player; vice-president, Edmund F. Brigham; secretary-treasurer, Robert L. Williams; assistant secretary, Ralph H. Stearns; musical director, Howard T. Chandler; executive committee, Norman L. Skene and W. S. Pepperell. On account of so many of the class having left Boston and being unable to attend the class meetings, the constitution was amended so that in the future the class officers could be elected by a postal ballot. The secretary is still at work on the First Decennial Record book and would be pleased to hear from any who have not replied to his letters as yet.—Ellis F. Lawrence has been elected president of the Oregon State Chapter of the American Institute of Architects which has just been organized. He is also acting as professional adviser in a competition for a new public auditorium for Portland, Oregon.—Edward H. Davis was married July 21 to Miss Edith R. Appleby at Detroit, Mich. They will be at home after October 15th at 304 Russell Street, West Lafayette, Ind. The congratulations of the class are extended to them.—Salvador Madero was peace commissioner from the Government to the Insurgents during the late revolution in Mexico. His official residence is Parros, Mexico, but most of his time is spent in Monterey, Mexico.—James C. Woodsome is now manager of the Tampa Electric Co., Tampa, Florida.—Alfred D. Nutter, as engineer in charge of structural steel work for Allegheny County, Pa., has charge of the design and construction of bridges for the county. At present he is building a cantilever bridge over the Ohio river at

Sewickley, Pa.—John F. McGann is vice-president of the T. F. McGann & Sons Co., manufacturers of architectural and sculptural bronze and brass. He has general charge of all shop detail and the outside erection of work.—The following recent changes in addresses have been received:—Harry E. Dart, 26 Ashley Street, Hartford, Conn.—E. P. Fleming, Braden Copper Co., Rancagua, Chile, So. Am.—James R. Putnam, Woodside Ave., Waterbury, Conn.—Ralph Whitman, U. S. Naval Station, Guantanamo, Cuba, via Postmaster, New York.—C. L. Albiston, 76 Oliver Street, Pawtucket, R. I.—F. S. Clapp, 502 Fitzsimons Bldg., Pittsburgh, Pa.—J. C. Woodsome, Tampa Electric Co., Tampa, Florida.—Langdon Pearse, of the Sanitary District of Chicago, delivered an illustrated lecture on "Sewage Disposal" before the Civil Engineering Society of Purdue University on October 5. The work of the Sanitary District and the scope of the testing station were described.

1902.

F. H. Hunter, *Sec.*, 281 Park Street, West Roxbury, Mass.

William R. Greeley was chosen early in the spring, through a competition, to design a memorial tower to the first settlers of Hingham, Mass. It will stand upon a rise of ground at the center of the town's activity, and is to be a 75-foot shaft, 20-foot square at the base and slightly tapering toward the top. The upper story, and the one for which it was chiefly designed, is a belfry 16 feet square, with louvres on all four sides, and is surrounded by a pyramidal slate roof. Under the belfry is the high ringing chamber with long narrow windows. Below this is the committee room, and on the ground floor is the memorial room in which an ancient stone sent from Hingham, Eng., is to be set, together with other such objects of historical interest. The exterior is designed in Dutch brick, and is rigidly simple in general outline, depending for its richness upon carefully studied panels and vertical ribs, and upon superficial decoration, both in brick patterns and in colored tiles.—Robinson is now superintendent of fire records for the National Fire Protection Association, 87 Milk Street, Boston. His duties include assisting in the editing of the quarterly issued by the association for spread of fire protection intelligence. The following is clipped from the *Insurance Standard* of October 14:

> J. Albert Robinson, for eight years an inspector with the Underwriters' Bureau of New England, and who a short time ago became superintendent of fire records for the National Fire Protection Association, was tendered a farewell dinner on Friday evening of last week, at the American House, Boston, by his former associates in the Bureau. Gorham Dana, manager of the organization, presided. A pleasant feature of the occasion was the presence at the dinner of W. P. Tenney, Alexander Ellis and G. B. Holt, former inspectors of the Bureau.
>
> Mr. Robinson, who during his connection with the organization has won the respect of both his associates and superiors by reason of his efficiency and ability, was presented with a leather thermos bottle case as an expression of their good will.

The gift, and many more or less humorous ones were appropriate to "Robbie's" adventures in his new Grout auto.—Harry Hooker is with Paine Webber & Co., Bond brokers, 82 Devonshire Street, Boston.—Edwards writes from Portland, Oregon, that beside his laboratory work in cement testing, he is consulting engineer for the Portland Cement Company of Portland, and is inspecting engineer for concrete and concrete materials for the Portland Railway, Light & Power Company. He reports a great deal of concrete work being done in the northwest and is full of enthusiasm about the country and the business prospects there. His office is No. 426 Railway Exchange Building.—Walter Putnam is engineer for the Texas City Company, Texas City, Texas. —Everett is now assistant professor in the department of naval architecture at the Institute.—Bourneuf is with L. M. Ham & Co., 152 Portland St., Boston. His residence is now 95 Trenton Street, Melrose, Mass., and his family is larger by a young daughter, born on October 15th.—The class secretary has made a business change, being now located with Waldo Bros., the well-known dealers in masons' supplies, at 102 Milk Street, Boston.

There have been several weddings since the July REVIEW was issued. The class secretary led off, having married Helen A. Sewall of Cincinnati on August 22. The wedding took place at the home of the bride's sister at Gorham, Maine, and was attended by the near relatives and a few friends. The honeymoon was spent camping in the virgin forest in the Great Gulf of the White Mountains. Mt. Washington and other peaks were climbed when the weather favored. H. D. Strong, '03, who took his first year at Tech with '02, was camping with two brothers in the region and was met several times. On September 11th the secretary and his wife tramped over the northern peaks of the Presidential Range and at the summit of Washington met Mr. and Mrs. C. H. Boardman, Jr., who had driven up from Jackson, N. H., where they were spending their vacation. The secretary and his wife are now at home at the address at the top of this column, and can be reached by 'phone, "2416—M Jamaica."—Dana Fisher was married to Miss Gertrude Elizabeth Shaw of Norton, Mass., on September 2. After an outing in Nova Scotia, they are at home at Riverbank Court, Cambridge.—Jason Mixter was married on September 21 to Miss Dorothy Fay. The wedding which was to have been held in the Church of the Messiah at Woods Hole, Mass., was held quietly at the summer home of her parents in that town, owing to the critical illness of the bride's sister.—Charlie Mixter's wedding took place on October 5, just two weeks after his brother's. His bride was Miss Helen Worthington McIntosh of Milwaukee. Both Charles and Jason Mixter will continue their surgical work in Boston.—Capen was married on October 10 to Miss Elizabeth Alice Greene of Warwick, R. I. "Robbie" was "best man" and after the affair was ended brought Mr. and Mrs. Capen

to Boston in his auto. Dana Fisher and his wife were among the guests, and Fred Farrell, '05, was an usher. The service was held in the old historic meeting-house in Warwick. After a brief trip Mr. and Mrs. Capen will make their home in Omaha.—The sixth wedding in the class was Westcott's. He was married to Miss Sarah Ida Underhill at East Orange, N. J., on October 9.—The class committee is arranging for a dinner to be held in Boston during November, and other events later in the season. Plans are also underway for the class record to be prepared next year and for the decennial reunion to be held next June.

1903.

F. A. Olmstead, *Sec.*, Oregon City, Ore.
R. H. Nutter, *Asst. Sec.*, Lynn, Mass.

The class outing at the Vesper Country Club, Lowell, on June 30 was a decided success and the opinion of all who attended was that an outing of this kind should be held each year. The success of the affair was due to the way in which it was handled by the committee consisting of Thwing, Sears and Gleason, and to Mr. E. B. Carney, '93, through whose kind invitation we were able to enjoy the hospitality of the Vesper Country Club.

Thwing's good "write up" of the outing follows:

"Friday showed a marked depression in industrial stocks. There was a drop of from one to five points, and the market showed very unsettled conditions at the close; no satisfactory reason has been offered for this drop." Quotation from the *Wall Street Journal*, June 30, 1911. If the writer of the above could have been on Tyng's Island on that date, and counted up the captains of industry there assembled, he would have understood, without further explanation, the reason for this business depression. On that day the office boy studied the life and adventures of Nicholas Carter, without interruption or restraint. The blonde stenographer chewed gum and wept over the trials and tribulations of "Bertha, The Beautiful Boiler Maker," by Bertha M. Clay (introduction and critical notes by Peter Schwamb). Superintendents and foremen; lumpers, draftsmen, blue print boys and errand boys all felt the loss of a controlling hand. Production was curtailed and the world's business received a temporary check amounting to 11.203% on the whole (2.2% allowance being made for C^2R and hysterisis losses). We are pleased to report, however, that the next day every one was on the job, and stocks regained their previous values.

Officially, on Friday, June 30, fifteen fortunate members of our class embarked on the 12.20 Montreal express. Through the efforts of Gleason, some time member of the Glee Club, a portion of the dining car was reserved for us, and the train made a special stop

at the Vesper Club's private bridge, leading to the island. After some trouble with the nickel-in-the-slot turnstile at the insular end of the bridge, we arrived safely on the club grounds and proceeded to enjoy ourselves according to our several desires; some played base-ball, and others played tennis, while those that did neither, sat on the grass, or on the veranda, and found fault with the technique of the various players. There was still another esoteric coterie that lingered ever near the ice box where the beer was kept. Although we had only one case of 24 bottles, the above group consisted of only 5 persons, and there was none left at night. (These are what are referred to in the opening chapter of the physical laboratory notes, as *significant figures.*) After the foregoing labors were concluded, luncheon was served, and a digestive period followed; then more tennis, walking or talking. The author of this report has not much to offer in the way of general news for the remainder of the afternoon, as Bacon and himself were busily defeating Stiles and Brown at tennis; at least they would have done so if Sears had not appeared inopportunely, and dragged every one off to dinner. The dinner, however, was certainly a credit to the management of the Vesper Club, and was heartily enjoyed by every one. After dinner we went together for a walk over the club grounds and then departed to our various homes, after having had the best time which the class of 1903 ever had on one of their gatherings. The following members of the class were present: Scholtes, Denham, Mason, Aldrich, Stiles, Peaslee, M. H. Clark, Bacon, Nutter, Wing, Thwing, Foster, Sears, L. P. Brown, Gleason.

The writer cannot close without offering to Mr. E. B. Carney, '93, the hearty thanks of all those who enjoyed his hospitality at the Vesper Club. We thank him for the tangible and material evidence of his forethought and still again for his spirit of good fellowship.

The following marriages are noted:—I. F. Atwood to Miss Clara Hilda Greenleaf at Gloucester, Mass., June 28.—E. A. Comer to Miss Annette Putnam Woodbury, at Salem, Mass., September 5.—A. S. Martin to Señorita Celina Soto at Costa Rica, July 5.

At the annual outing of the Technology Association of Connecticut Valley, E. W. Pelton was elected secretary and treasurer for the next year.

Plans are being made to hold a series of informal class dinners during the winter. Notices will be sent out later. Every '03 man should plan to take in these dinners as they offer a fine opportunity to renew old friendships and to let the world know that M. I. T., '03, is still on the map.

Kenneth W. Endres, VI, is the proud father of a son, Kenneth, Jr., born September 20th at Short Hills, N. J. It will interest the class to know that Kenneth, Jr., is preparing for M. I. T.

1904

EVERETT O. HILLER, *Sec.* Technology Chambers, Boston, Mass.
ADDISON F. HOLMES, *Asst. Sec.*, 7 Holborn Street, Roxbury, Mass.

There has been little doing in class affairs during the summer. An attempt was made in August to get up a party of '04 members for an outing at the Vesper Country Club, Lowell. A number of causes combined to prevent the men from attending, so the scheme was abandoned. The first outing at the Vesper Country Club a year ago was very successful and it was hoped that the experience might be repeated.—We have a welcome word from Bouscaren who has handled much important work for Stone & Webster other than that mentioned in his letter quoted herewith:

> Galusha and I are working on the electric installation of the hydro-electric plant at Keokuk, Ia. This plant will be, when completed, the largest electrical installation in the world, developing 240,000 H. P. from the waters of the Mississippi River.

—Under the letter head of the Perfection Specialty Company, 65 Thomas Street, Portland, Me., we have the following from Sam Worcester:

> Regarding myself and experiences there is little out of the ordinary. Two of the last five years I spent in the paper manufacturing trade running a moderate sized board mill. The last three I traveled all over the United States selling and demonstrating a special process of manufacture. During the past year I developed and put on the market the Premo Pen-Pellet Ink, and had such good success with the same that in February I made one more change, this time coming here to live and going into business on my own account. Since then all I can say is that I have found that, when one works for oneself the day does not consist of any stated number of hours. However, the point of view also has changed, and though busy as can be the added interest is sufficient compensation.

—George H. Powell was married on the 4th of November at Philadelphia to Miss Mary Elizabeth Bonsack.—Carl King has left the wire mill of which he had charge to accept a position as a teacher in the new Wentworth Institute in Boston.—The secretary was fortunate enough to see Ovington finish his successful Nashua-Worcester-Providence-Boston flight held in connection with the Harvard-Boston flying meet for the $10,000 prize offered by the *Boston Globe*, and to congratulate him and Mrs. Ovington upon the showing made. His arrival at the field was a very spectacular event. Reports from various points from Providence to Boston were received as he passed the successive towns and finally he was seen, in the twilight, just a speck over the great blue hill to the south of the field. Tom Sopwith, the English aviator, went out in his Blériot monoplane to meet and escort him in. He approached the field flying very high and all at once by one hair-raising volplane swept down and landed. The accomplishment of the flight, which others of longer experience would not attempt,

and the spectacular nature of the arrival moved the large crowd to a wild demonstration of enthusiasm.—"Reggie" Wentworth is the proud father of John Wentworth, born July 10. The Tech show of 1931 is assured of an efficient manager if the son follows the footsteps of his illustrious father.

The following changes of addresses have been called to the secretary's attention:—Henry C. Field, University Club, Seattle, Wash.—William H. Foster, 53 Winthrop Street, West Newton, Mass.—L. R. Grant, Seattle Electric Company, Seattle, Wash.—Robert S. Hamilton, Lewistown, Mont.— L. A. Herman, 189 Bridge Street, Fall River, Mass.—R. A. Wentworth, 2045 North 63d Street, Philadelphia, Pa.—Fremont N. Turgeon, 7 Commonwealth Avenue, Gloucester, Mass.—T. W. Steidemann, 4110 North 11th Street, St. Louis, Mo.—Herbert L. Shores, 267 Howard Street, Rockland, Mass.—Richard S. Shohl, 714 South Crescent Avenue, Avondale, Cincinnati, Ohio.—Alex. W. Richards, Totten & Rogers, 808 17th Street, Washington, D. C.—John B. Rapier, 352 State Street, Mobile, Ala.—Henry S. Pitts, 5551, Von Versen Avenue, St. Louis, Mo.—L. W. Nickerson, 5530 Locust Street, West Philadelphia, Pa.—Frederick W. Horton, care of U. S. Bureau of Mines, Washington, D. C.—Samuel T. Worcester, 65 Thomas Street, Portland Me.—A. P. Weymouth, 1927 East 59th Street, Cleveland, Ohio.—Ralph B. Williams, 249 High Street, Newburyport, Mass.—Edwin F. Allbright, care of Stone & Webster, 147 Milk Street, Boston, Mass.—K. M. Baum, Lens Department, American Optical Company, Southbridge, Mass.—John S. Bridges Jr., care of Hixon Electric Company, 246 Summer Street, Boston, Mass.—Harry H. Cerf, 361 South Fairmount Avenue, Pittsburgh, Pa.—Evarts W. Charles, Baker, Ore.—E. L. Clifford, care of Kentucky Electric Company, Louisville, Ky.—Emmet Cockrill, 911 Scott Street, Little Rock, Ark.—Joseph W. Crowell, 1022 Commonwealth Avenue, Newton Centre, Mass.—Irving E. Adams, Hazel Atlas Glass Company, Clarksburg, W. Va.—Hiram A. Hill, Shokan, N. Y.—Grant Ford, 432 West 61st Place, Chicago, Ill.—Carl King, Wentworth Institute, Boston, Mass.

Edward F. Parker, Jr., Course IX., '04, was a delegate from the Beacon Trust Company of Boston, to the convention of the American Institute of Banking, at Rochester, N. Y., September 7–9.

1905.

GROSVENOR D'W. MARCY, *Sec.*, 246 Summer Street, Boston, Mass.

William Frederick Becker and Miss Charlie Katherine Hummer Proctor were married at Bowling Green, Ky., on June 26. They are now at home at Berwyn, Ill. Becker and his brother operate the American Maintenance Company of Chicago.—Roswell Davis and Miss Helena Stone, of Washington, Conn., were married

September 1. Last June Ros was in the wilds of Arkansas, building a veneer factory, and the secretary had a picturesque letter from him describing the beauties of a place whose chief products were mud, mosquitoes and malaria, and where the only excitement was meeting the four daily trains. But this is all changed now, and Ros is back in Elizabethport, N. J., with the Singer Manufacturing Company, and is a settled family man.—Bob Folsom announces the birth of a daughter, Ruth, on September 1.—The secretary received a very pleasant note from Kiyo Makino, expressing his interest in the REVIEW and various class communications, and enclosing dues for five years. Makino is located at St. Margaret's School, 26 Akashicho, Tsukiji, Tokyo, Japan.—Jack Flynn has resigned as mechanical engineer with the Isthmian Canal Commission, and is arranging to settle down here in the north and lead a quiet respectable life. His present address is 31 Marcella Street, Roxbury, Mass.—Bill Spalding has resigned as superintendent of the electrolytic refinery of the Buffalo Smelting Works, and also from his professorship in the Buffalo University and his official connection with the militia, to take up the application of scientific management. He will spend two months in Germany and Switzerland studying methods, and on his return will undertake this work in a large plant in Buffalo.—Sid Cole left the Gas Company at Little Rock, Ark., to become manager of the Fort Madison Gas Light Company, Ft. Madison, Iowa.—Roy Allen writes from Villa Escobedo, Chih, Mexico:

> No news, nothing but work. Now that the revolution is over we are going right ahead with our plans. Have started a new 1000-foot, three-compartment shaft, and within a year hope to be taking out 300 tons of ore daily, and be paying good dividends. Railroads and mail service have been tied up so much that I haven't heard from any of the fellows for many weeks, so can give no news of them. Three cheers for '05 and the NEW TECH!

—Ernest G. Schmeisser, after several years with the New York Central & Hudson Railroad and the Pennsylvania Tunnel & Terminal Railroad Company, has left them to take the position of 2d vice-president with the Wiener Machinery Company, 50 Church Street, N. Y. They deal in punches, shears and heavy machinery for structural work, and have increased their capital and established branch offices in Boston and Pittsburgh.—Horatio Whiting has left the patent office and opened an office of his own at 30 Vesey Street, New York.—Eugene F. Kriegsman made a short visit in Boston this fall, being the first time he has been back since graduating. He is carrying considerable work as designing and constructing engineer, with headquarters at 1537 Larkin Street, San Francisco, and reports that F. M. Eaton and B. G. Philbrick are doing well with the Eaton-Philbrick Laboratories, chemists and bacteriologists, 444 Market Street, San Francisco, also that Fred Frazer is with the Crescent Feather Company

of that city.—Charlie Clapp writes from Geological Survey, Ottawa, Ont.:

Have become a member of the Canadian Geological Survey as well as a benedict, and am out here on the coast again for the summer, working up the Nanaimo coal fields. Am just now revelling in coronation doings almost as if I were a Britisher, but surely not a ——— one.

—Hallett R. Robbins writes from Haines, Alaska:

Since August, 1910, I have been engineer for John Rosene of Seattle. This summer I am locating a trunk line of railroad into the interior from this place, opening up some large deposits of iron and copper ore, investigating the water-power resources of this region, and will make an exploration trip later in the summer to the headwater region of the White River in Yukon Territory. Permanent address, Box 51, Seattle, Wash.

—B. L. Johnson gives a most interesting account of the work with the U. S. Geological Survey in Alaska in the following letter:

It is rather a long call between the Rathskeller of the American House in Boston, and Seward, Alaska, and it is some time since I promised to outline my doings the last year or so. I took up the Alaskan work in 1909, leaving Seattle on June 2, going up the Inside Passage, over the White Pass, and down the Yukon, through the Klondike and farther on down the Yukon to Circle, Alaska, where we unloaded our horses and began work. Our work that season consisted in geologic mapping of the northern portion of the Fairbanks quadrangle and included a trip to Fairbanks and to the gold quartz discoveries in that district. Of a pack train of seven horses when we started we had three left when we reached Rampart on our way out. We returned up river and spent the winter in Washington, D. C. In 1910 I was assigned to a party to work along the south slopes of the Alaskan Range. We left Valdez with a pack train of eight horses and five men and mushed 200 miles into the interior, striking out first to the Slate Creek District to the east, and then doubling back on our track into the new country to the west, winding up at the end of the season on Valdez Creek at the head of the Susitna River. We mapped the geology along our route, paying especial attention to the economic possibilities of the placer gold camp on Valdez Creek. After a 250 mile hike to the coast at Valdez, we sailed for the outside and again passed the winter in Washington. Coming to the present season, I have been assigned to this district. There are four geological survey parties in the Kenai Peninsula this year, two geologic and two topographic. My party, of one, is to make a detailed investigation of the gold quartz discoveries which have recently been made here. In July and August one of the topographic parties will make a detailed topographic map of the Moose Pass district which I will use in later geologic work. Numerous promising gold quartz veins have been found and developments are now in progress on several of the creeks. This detailed map on a scale of one mile to the inch will cover an area of about fifty square miles. The rest of the area will be mapped on a scale of about three miles to the inch, and these maps will be available for my use in the geologic work. At the end of the season, probably in September, after a short visit to Latouche, I am to spend a few days in Valdez and vicinity, where a small sized gold quartz boom is on at present. Will close here for if I went into detailed descriptions of the country or the work of the past two seasons, I would have but little time for the coming season's work.

—Harry Wentworth describes an interesting trip to some of his mining property in the following letter, headed Half Moon Gulch, Col.:

I have just received your notice of the class dinner on the sixth, and guess I'll not attend this time, though I am sorry to have missed it. I have been hitting the trail for the past four weeks and am now writing in a log cabin in the woods. Yesterday went up to the top of Champion mountain (14,100 ft.), and I tell you it makes us fellows from the sea level puff the last few hundred feet, especially those that have my build. The snow is still pretty deep in the ravines up here, and one can go in a couple of hours from the nice flowers into the deep snow. This cabin is in the gulch between the two highest mountains in Colorado, Mount Massive (14,468 ft.) on the north, and Mount Elbert (14,464 ft.) on the south. I have been travelling the country hereabouts for the past ten days on horseback, and I have about come to the conclusion that all my meals hereafter will be taken from the mantelpiece. When not otherwise engaged I have been helping "punch" jacks through the snow. A jack hates the water, especially these mountain streams, and neither coaxing nor clubbing seems to assist him to cross a creek in the snow if he doesn't so desire. The only recourse left is to put a rope around his neck, tie the other end to the horse's tail, and haul Mr. Jack in any position he happens to fall across the stream. The pleasant part of this is that it does not seem to disturb the jack's good temper. There are many such things here in the mountains to interest the easterner. After spending ten days in the southern part of Missouri while the temperature tried to push off the 100 mark on the thermometer, I have just gotten cooled off up here, and hope now to get home before long.

—Jimmie Barnes writes that the class baby and his twin sister are growing to be big and fairly well-behaved children. (Note by editor,—How like their father!) They have started school this fall. Just think of that fellows, the class baby in school already. How behind the times you single fellows must feel!—It is rumored that the mighty class of 1902 meditates challenging the class of 1905 to a bowling tournament. Ways and means will be discussed at the Friday luncheons at the American House, which every '05 man in or near Boston should attend.

1906.

RALPH R. PATCH, *Sec.*, 15 Lincoln Street, Stoneham, Mass.

The secretary has received announcements of three interesting weddings of classmates: Herbert Stockwell Whiting and Miss Helen Jeannette Gough were married on Saturday, June 3, at Jersey City, N. J.—Another wedding was that of David Darby Eames to Miss Lilian Agnes Deiss on June 26 at Roxbury. The *Transcript* of August 7 had a notice of the engagement of Lemuel D. Smith to Miss Cora Cudworth who was graduated from Boston University Law School last June, the statement being made that the wedding was to take place in September.—The secretary has received a number of letters from members of 1906 giving information in regard to their doings and whereabouts.—H. R. Patterson is in Trenton, N. J., where he is connected with the Trenton Iron Works as assistant superintendent.—Paul S. Schmidt writes that he was with the Courtney & Emerson Engineeering Co., civil and structural engineers from 1906 to 1910. Since then he has been in business for himself as architectural engineer, making

a specialty of designing factories and warehouses.—R. W. Seyms is in California, but he has not sent us his address.—S. W. Wilder is at 64 17th Avenue, Paterson, N. J., where he is superintendent of the Dolphin Jute Mills. He has been connected with the mills since he left the Institute.—Stanley, who writes that he is married, was with the Westinghouse Electric & Manufacturing Co., for a year, and since that time he has been connected with the Canadian branch of the Stanley Rule & Level Co., and later with the Stanley Rule & Level Co., of New Britain, Conn.—Arthur T. Trowbridge writes that he has averaged one position a year since he left Technology. He first became connected with the Gifford & Wood Co., Hudson, N. Y., manufacturers of ice-handling machinery where he was engaged in drafting. He then did general mechanical engineering for a little over a year with the Winchester Repeating Arms Company, of New Haven, Conn. From there he went to the George F. Blake Manufacturing Company, East Cambridge, Mass., where he was in charge of the design for new construction and repairs on the plant. For about a year and a half he was connected with Lockwood, Green & Co., in Boston and is now with the American Agricultural Chemical Company, 92 State Street Boston, in their engineering department.—Maxwell A. Coe is connected with the Stanley Rule & Level Co., of New Britain, Conn.—H. V. Coes went into the telephone manufacturing business after leaving Technology and then made telephones in Indianapolis. He spent some time in the shops of the Pennsylvania Railroad at Altoona, and then went to New York with the New York Edison Company as assistant engineer. He afterward became mechanical engineer with the Liquid Carbonic Company of Chicago, in which capacity he designed, built and operated the largest carbonic acid factory in the world, at Cambridge, Mass. He recently resigned from the Liquid Carbonic Company to become manager of the Chicago office of Lockwood, Green & Co., of Boston. His present address is First National Bank Building, Chicago. He is the author of the following articles: "Can Railroad Collisions be Reduced to a Theoretical Minimum," *Engineering Magazine* for 1908; "A Decade of American Railroad History in Graphic Form," *Engineering Magazine* for 1908; "Steel Rail Breakages—Questions of Design and Specifications," *Engineering Magazine* for 1908; "Smoke Prevention or Smoke Consumption," *Engineering Magazine* for 1909; "The Necessity of Thorough Preliminary Work in Industrial Undertakings," *Engineering Magazine* for October, 1911.—F. E. Earl is at 55 South Water Street, New Bedford, Mass., where he is in business for himself after having spent five years in Boston with a firm of steam fitting contractors.—C. E. Warren's address is 236 6th Avenue, La Grange, Ill. For the first three years after leaving Technology he learned the machine business and became manager and secretary-treasurer of the company, which was located at Crowley, La. His health broke down and

he had to give up his work there. He is now assistant to the vice-president of Seymour & Peck Co. of Chicago. He is married and has one child, a girl.—W. W. Gaylord is at Waterbury, Conn., where he is connected with the engineering department of the American Brass Company. He is engaged in the laying out and designing of power generating and transmission machinery used in the company's mills. His address is 42 Mitchell Avenue.—H. W. Brown is assistant engineer with the American Agricultural Chemical Company.—Hermann C. Henrici became engineer with the Bell Telephone Company of Kansas City, Mo., on leaving the Institute, and later was manager for the Bell Telephone Company in various localities. He now owns a half-interest in the W. T. Osborn Electrical Company, Kansas City, Mo.—Charles E. Johnson, after spending two years in the service of the Telephone Company, is in the engineering department of a large construction concern which is erecting a number of structures at Gary, Ind. His address is care of Riter Conley Manufacturing Company, Pittsburgh, Pa.—Ernest W. Smith was a student engineer in France, Germany and England after leaving the Institute, giving particular attention to the alkali industry. From 1907 to 1909 he was in the soda ash department of the Solvay Process Company of Syracuse, N. Y., and for the next two years was works manager of the Royal Solvent Company, Orange, N. J. He is now with the W. E. Wood Construction Company, Ford Building, Detroit.—James F. Wick spent two years with the Youngstown Sheet & Tube Co. as assistant master mechanic and inspector of new construction and equipment. Since 1908 he has been manager and treasurer of the Crystal Ice & Storage Co., Youngstown, Ohio. He is married and has one boy.—Harry H. Cook sends his address as 44 Massachusetts Avenue, Springfield, Mass. After leaving the Institute he became chief draftsman of the Coffin Valve Company and later engineer for the Edison Electric Illuminating Company. He then became chief engineer of the Coffin Valve Company where he remained until 1910. He was mechanical engineer of the Providence Engineering Works for a year, and is now mechanical engineer of the Chapman Valve Manufacturing Company. He is married.—Lewis A. Riley, 2d, was married May 20, 1911. He is now engineer in charge of maintenance and way works, grade reduction surveys, etc., for the Lehigh & Hudson River Railroad Co. He was with J. G. White & Co. of New York for one year, afterward taking his present position.—A letter will reach S. A. Nash, Box 332, Tuscaloosa, Ala., where he is concrete inspector for the Tuscaloosa Railroad. After leaving Tech he was salesman for a wholesale paper house and then went with the New York Central & St. Louis Railroad in the surveying corps.—J. W. Anderson writes that he has been employed in various shipyards on the Atlantic coast, but gives no present address.—

Fred S. Phelps was with the American Steel & Wire Co., Worcester, for a time and is now assistant superintendent for the Pacific Works of the American Steel & Wire Co., San Francisco, Cal.—H. J. Ball is an instructor in the Lowell Textile School in the engineering department. He has assisted in installing the Taylor system at the Watertown Arsenal, has done mechanical engineering for the Lincoln-Williams Twist Drill Company at Taunton, and has been engaged on building construction at the Lowell Textile School. He is married, and a daughter was born May 17, 1910.—Harry V. Fletcher has been engaged in civil engineering work since leaving Tech. He is married and his address is 308 Mason Building, Houston, Texas. He is a member of the firm of Dewson, Fletcher & Teich, architects and engineers. —A. H. Keleher was with the New York Edison Company for two years and is now with the Holophane Glass Company of New York, 16 East 40th Street, New York City. He is in charge of the Holophane business in the Latin-American countries.—The address of R. B. Gregson is Box 164, Southbridge, Mass., where he is connected with the American Optical Company.—Allyn C. Taylor gives his residence at 34 Pitt Street, Charleston, S. C. He has been connected with the United Gas Improvement Company of Philadelphia since leaving Tech. His locations have been in Philadelphia, Harrisburg, Pa., and now he is superintendent of the gas department of the Charleston Consolidated Railway & Lighting Co., Charleston, S. C. Taylor is married and has one daughter, born May 29, 1910.—Walter H. Trask, Jr., is engineer of the United Hydro Electric Company, Idaho Springs, Col. After he left Technology he became inspector on the New York Central and Hudson River Railroad, electrical department. He then went to the Denver Engineering Works and afterward became assistant to the manager of the sales department of the Central Colorado Power Company.—Wendell P. Terrell went with the General Electric Company at Lynn as draftsman for a few months after leaving the Institute and then became professor of mechanics and superintendent of the mechanical department, Prairie View State Normal and Industrial College, Prairie View, Texas. In 1910 and '11 he was a special student in architectural engineering at the Institute.

Charles Emerson Hovey.

A cable from the Philippines announces the death on September 24 of Charles E. Hovey, U. S. N. Ensign Hovey received his commission in 1909, and made the cruise around the world on the U. S. S. *Connecticut*, later being transferred to the U. S. S. *Ohio*. He was ordered to duty in the Philippines, having been assigned to the gunboat *Pampanga*, and met his death at the hands of the natives on the Yucan Islands. Hovey was both an able

and popular man, and had recently published a manual for watch officers. His mother and sisters have the sympathy of his class, for although he was with us but a year, he will be remembered by many of our men.

1907.

BRYANT NICHOLS, *Sec.*, 143 Garland Street, Everett, Mass.
HAROLD S. WONSON, *Asst. Sec.*, 149 East Main Street, Gloucester, Mass.

I. *On the Part of the Secretaries*

As usual in the fall, there is only a small amount of news regarding '07 men to record in the REVIEW. The secretaries have just three things to state. First, they are working on a new plan of carrying on correspondence among the members of the class. Second, a letter from them containing many important announcements and plans will be sent to every member of the class about January 1, 1912. Third, DON'T FORGET that next June we celebrate our fifth anniversary, and plans are already underway for one great and glorious celebration—probably a three or four day house-party or camping-party somewhere within easy reach of Boston, taking place on Saturday, Sunday, Monday, and Tuesday, June 1, 2, 3, and 4. Fuller plans in the January letter and later. Begin now to arrange your vacation next summer so as to be with your class-mates on these days.

II. *Progress in '07 Family Life*

Since the July REVIEW the following marriages and births have taken place: Charlie Allen has a daughter, Barbara. Unfortunately we do not know the date of her birth.—A. B. Arnold was married to Miss Ruth Goodrich of Plainville, Conn., on September 20, 1911.—On September 6, 1911, C. W. Beam was married to Miss Cora Isabel Wilson at Watertown, N. Y.—Frederick Bachmann married Miss Ethel M. Corrie at Westfield, Mass., on August 22, 1911. "Bach" is now with the legal department of the Thomas Edison Company, and his address is 18 Halstead Place, East Orange, N. J.—On October 3, 1911, occurred the marriage of Warren A. Gates to Miss Marion W. Sloane of Newark, N. J.—Wheaton I. Griffin, we learned a short time ago, was married on October 26, 1910, and on August 10, 1911, he became the father of a daughter, Elida Wheaton Griffin.—We believe it has never been recorded that J. W. G. Hanford was married August 30, 1905. This is late in the day, but we never knew the date until this fall.—In Houston, Texas, on July 11, 1911, Miss Elizabeth Haskins became Mrs. A. E. Hartwell.—Miss Gladys E. Holden and H. B. Hosmer were married on April 20, 1911,

and are living at "Hollowdene," Billerica, Mass.—At Lowell, Mass., on May 16, 1911, John Mather married Miss Mabelle Russell.—W. P. Rayner married Miss Nellie E. Tyler of Philadelphia on June 21, 1911. Their address is 440 South 43d Street, Philadelphia.—On August 28, 1911, Phelps N. Swett and Miss Eleanor MacAdam of West Medford, Mass., were married.—Philip Bangs Walker, Jr., arrived at the home of Mr. and Mrs. P. B. Walker on August 15, 1911.—Miss Ethel L. Chandler married R. G. Woodbridge on July 5, 1911, at Waltham, Mass. They live at 2226 West 17th Street, Wilmington, Del.—William G. Waldo was married in June to Miss Irene A. Hayward, a Briarcliff girl. Their honeymoon was spent at the Thousand Islands. Upon their return they will live in Mercedes, Texas. Waldo is promoting a construction company in the Rio Grande valley.

III. *Further Happenings Among '07 Men*

F. O. Adams, Jr., is now at 195 Steiner Bank Building, Birmingham, Ala.—Our old friend, E. Dexter Boles, has at last been heard from. His address is 84 State Street, Boston, care of General Electric Company. He writes to Macomber: "Am not peddling motors now, but am doing the experimental shuffle for the mill power department. Mr. Paine, leader of orchestra. If any of the boys are in the market for some fine second-hand ideas, why, bless my soul, Mac, pass the salad!" How natural that sounds!—John G. Barry writes that for the present his address is care J. E. Spurr, Chamber of Commerce, El Paso, Texas.—J. C. Bradley in August could be reached most directly by writing to Box 1047, Waterbury, Conn.—J. P. Chadwick, care General Office, 4 C Company, Cananea, Sonora, Mexico, was the proper combination in July.—L. R. Davis also is in Mexico, at San Geronimo, Apt. 16, Oaxaca.—S. J. Egan is in the East now. Address 223 Seymour Street, Syracuse, N. Y.—C. S. Fleming's address is 3119 Landis Street, Sheridanville, Pittsburgh, Pa.—John Frank wrote the secretary on June 27 that he had been so busy for the past three months that he forgot to go home nights. He continues:

> You perhaps do not know that I have recently reached the elevated position of vice-president of my company (Ilg Electric Ventilating Co.), and consequently the responsibility is rapidly turning my hair gray.

—F. B. Groover can be reached at Box 308, Statesboro, Ga.—Frank S. Hutchings, Castleton, Vermont.—A letter received from W. B. Gonder the first of the summer from the Philippines where he is government sugar expert says that the prospects of future development for the sugar industry seem better than ever there.

His address is Government Sugar Laboratory, Iloilo, P. I.—Wheaton Griffin, in addition to the news mentioned above, writes:

> After leaving Tech in 1908, I promptly gave up engineering and have since been endeavoring to gather in a few coins by selling groceries. . . . Although it doesn't make much difference in the wholesale grocery business whether $f=\frac{My}{I}$ or not, I wouldn't give up the years spent in Boston for anything.

Griffin's address is 13 West Street, Utica, N. Y.—J. W. G. Hanford writes a letter from which only part can properly be quoted:

> Not more than six months have I spent strictly at mechanical work. The rest has been mixed, mostly civil. Am now drafting in the city engineer's office, a purely civil job. All the mechanical engineering in Spokane could be done by one man, and as no one can corral it all, there's not a living in it for anyone. This is virtually true of most western cities. . . . But a son of M. I. T. should have adaptability enough to meet varying conditions, and so we'll make the effort.

—Philip B. Walker writes of a change of address. He is going to move to Needham, Massachusetts, that his son Philip Bangs Walker, Jr., born August 15, 1911, may have the benefits of country life.—Hanford is at E 1913 Providence Avenue, Spokane, Wash. He would welcome letters from '07 men. Why not write him?—B. D. Johnson, 109 Luzerne Avenue, Pittston, Pa.—R. J. Karch, 710 Cumberland Street, Lebanon, Pa.—W. I. Keeler is now a member of the contracting firm of Davenport & Keeler, Box 100, New Britain, Conn.—J. C. Kinnear, Steptoe Valley Smelting Co., McGill, Nev.—J. H. Link, Rushville, Ind.—F. C. Mabee, care Baptist College, Shanghai, China.—Our president, Macomber, has been appointed chief electrical engineer for the Tenney Syndicate properties during the summer. His address is 201 Devonshire Street, Boston, Mass.—M. E. MacGregor, 35 Fountain Street, Pawtucket, R. I.—B. F. Mills, Care Bureau Public Works, Sorsogon, P. I.—W. P. Monahan, 509 Trust & Savings Building, Los Angeles, Cal.—J. G. Moore, Florida Coast Line Coast & Transportation Company, West Palm Beach, Fla.—J. S. Nicholl is with W. B. Snow, publicity engineer, 170 Summer Street, Boston.—F. K. Niles, 2665 Devisadero Street, San Francisco, Cal.—E. C. Noyes, Trussed Concrete Steel Company, Detroit, Mich.—E. H. Packard has come back to the vicinity of Boston, and has taken up his father's business in Brockton, Mass. His address is "The Chesston Apartments," Brockton, Mass.—T. W. Roby, Jr., Shenandoah Club, Swissvale, Pa.—D. E. Russ, 23 Pinnacle Road, Rochester, N. Y.—R. E. Shedd, 20 Cedar Street, Woburn, Mass.—Robert Tappan, Cutler Building, Rochester, N. Y.—S. R. T. Very, 25 West 42d Street, New York.—S. D. Wells, Forest Products Laboratory, Madison, Wis.

1908.

JOHN T. TOBIN, *Sec.*, care F. F. Harrington, Bridge Engineer, Virginian Railway Company, Norfolk, Va.
RUDOLPH B. WEILER, *Asst. Sec.*, care The Sharples Separator Company, West Chester, Pa.

I. *On the Part of the Assistant Secretary*

The July meeting took the form of an outing to Nantasket on the 8th. Those that went down on the 1.20 boat started a ball game on arrival at the beach, lined up as follows:

Single Men		*Married Men*
L. B. Ellis,	c.	R. I. Ripley.
W. D. Ford,	p.	W. E. Barton—E. Smith.
"Doc" Leslie,	1b.	E. Smith—W. E. Barton.
Carl Bangs,	2b.	G. S. Clatur.*
O. S. Lyon,	3b.	C. Youngerman.
Burt Cary,	s.s.	"Dick" Collins.*
Langdon Coffin,	l.f.	A. W. Heath.*
"Pop" Gerrish,	r.f.	R. J. Batchelder.*

Umpire, E. H. Newhall; custodian of the wardrobe, J. R. Nichols. The game was won, of course, by the married men, in the middle of the ninth, 17 to 14, thus proving, etc. After the game the fellows adjourned to the State bath house and then to the water where the contest was resumed with a cork ball. At 6 p. m. adjournment was made to the Palm Garden in Paragon Park where tables had been reserved, and the numbers were increased by the arrival of other members on the 5.20 boat. The following sat down for the feed,—Bill Barton, Carl Bangs, R. J. Batchelder, B. W. Cary, "Dick" Collins, Langdon Coffin, G. S. Clatur, L. B. Ellis, "Pop" Gerrish, Sherwood Hall, A. W. Heath, "Doc" Leslie, O. S. Lyon, A. C. Nichols, J. R. Nichols, E. H. Newhall, R. I. Ripley, Ed. Smith, Conrad Youngerman; C. W. Clark was also present—with two fair friends—see matrimonial notes. After dinner the bunch proceeded to "do" Paragon Park—each buying a combination ticket. A "special" exhibit was held at the Diving Girls, and a fine show it was, with the married men all lined up in the front row. G. M. Belcher came down on the boat with the rest, but owing to certain attractions in Duxbury had to leave immediately in order to hasten his eligibility for the married men's team—we suspect. Return was made on the 9.40 boat, the fellows singing most of the way back. Altogether it was a most enjoyable time, and your assistant secretary in writing it up from information furnished by "Pop" Gerrish, certainly

*Recruits for married men from those who "have hopes."

was sorry to miss it.—The September meeting was held on the 12th at the Boston City Club. Although more than twenty signified their intention of coming, only fifteen appeared. As twenty is the minimum number which must be guaranteed, the class went in the hole for five seeds. This is the third time that this has happened in the last three years, and it is entirely unnecessary. If, after sending in an affirmative reply, fellows would only notify the person in charge of the arrangements by 'phone, or otherwise, that they cannot attend, when something unforeseen occurs, it would make a certainty out of an uncertainty, save worry on the part of those in charge and save money for the class. This can hardly be called an unreasonable request. After some discussion it was voted that this deficiency be made up out of the class treasury, rather than by appeal to those at the dinner, which was also suggested.—H. T. Gerrish was reëlected as class representative on the Alumni Council for a term of three years. W. D. Ford was appointed a committee of one to send to the assistant secretary a letter of good wishes and appreciation of his labors in behalf of the class. Your assistant secretary wishes to acknowledge receipt of these sentiments. It is both a privilege and a pleasure to work in the interests of such an organization. But it should be remembered that whatever measure of success has attended our efforts, has been due more to the united support given by the individual members than to the efforts of any single man. Your assistant secretary wishes to take this opportunity to thank the members for the interest they have taken in class matters and for the uniformly courteous treatment he has received at their hands. Were it not for the general interest shown it would not be possible to present much more than a "new address" column for our class notes in the REVIEW. Those present at the dinner were: R. E. Beck, E. J. Beede, B. W. Cary, Langdon Coffin, A. M. Cook, L. B. Ellis, W. D. Ford, H. T. Gerrish, who presided, Sherwood Hall, Jr., A. W. Heath, H. B. Luther, S. C. Lyon, O. S. Lyon, E. J. Scott, C. W. Whitmore. Luther was very fortunately able to take in this dinner while spending his vacation from graduate study in Germany, on this side of the water. After the dinner the fellows adjourned to the bowling alleys where the single men's team, captained by Cary, twice defeated the married men's team captained by Whitmore, at candle pins.—We have the announcement through the papers of the engagement of Alfred B. Babcock to Miss Hazel C. Brant of Brooklyn, N. Y. Miss Brant is a graduate of Packer Institute.

II. *Matrimonial*

This business still continues good. C. W. Clark was married to Miss Beatrice G. Armstrong August 30 at Jamaica Plain, Mass. —H. C. Elton was married to Miss Marjorie S. Perry June 23

at Dorchester, Mass.—J. C. Gaylord was married to Miss Grace Wright August 1 at Santa Ana, Cal.—I. M. Guilford was married to Miss Emma M. Fitch September 20 at Brookline, Mass.; at home after November 1, West Cheshire, Conn.—H. F. Richardson was married to Miss Lillian Naylor on October 2 at Brooklyn, N. Y.; at home after December 12 at 158 Rogers Avenue, Brooklyn, N. Y.—H. H. Howland was married October 18 to Miss Etta E. Mason at Lowell, Mass.

III. *Letters*

We have received the following very breezy letter under date of April 12 from C. O. Brown, assistant engineer, irrigation division, Bureau of Public Works, Manila, P. I.

'08 seems to be making itself famous in the Islands between P. R. Fanning, "Wild Bill" Adams and the writer of this letter.

. . . "Work," did you say? Oh yes I work; did you think that the tropics prevent work?—nothing like that, son. To be sure we guys in the office only put in eight hours a day, but I had an "apprentice" job of two years in the field before the office called me, and let me tell you it was no eight-hour stunt there either. I seldom if ever put in less than ten hours' field work to say nothing of figuring notes after we were comfortably filled with canned chow and chicken. Then, too, the traveling during the day was not always over macadam roads. Nice gooey rice paddies, carabao wallows, bamboo thickets, etc. But I enjoyed it after all and have never regretted the two years in the "bosque." That's the only place to get real near to the real Fillipino nature. A person living in Manila ten years will not know as much about the real native as a man living two years in the Provinces. That reminds me, the recent Friar Lands Investigation in Congress instigated (outwardly) by Representative Martin receives nothing but adverse comment throughout the Islands. And that bunch of hot-air artists from Boston, who pose as anti-imperialists, are the butt of jibes and jokes all through the Orient. I see by the paper that they are attacking Mr. Dean C. Worcester, the commissioner of interior of the Islands, on the ground that he has outlived his usefulness, etc. The accurate knowledge of conditions in the Islands displayed by that bunch of "Old Maid Bostonians" is laughable. Incidently Mr. Worcester is the most competent commissioner we have and a man thoroughly conversant with the Islands, their needs and those of the people. But, of course, the Bostonians know more than a man who has spent the last twenty years in close touch with conditions. Honest, I am sometimes ashamed to admit that I come from that part of the country. I had the good fortune to be in Manila during the period of volcanic activity of the latter part of January. We sure had earthquakes for "breakfast, lunch and dinner." The exact number has slipped my mind now, but the old earth wobbled and wriggled some nine hundred times inside of a week. Of course, the town didn't fall at every shake, but many of them were apparent, and decidedly so. One morning, in particular, about 10 a. m., we had a beautiful wobble and the drafting room emptied itself in a twinkling. The houses are of the typical Spanish type, with which you are doubtless familiar, and it would take a twelve-inch gun to make any impression on them—a little thing like an earthquake wouldn't do it. About 1 a. m., January 30, there was an explosion and the bed seemed to jump up at least a foot. We all jumped out of bed and looked toward the volcano in the southwest and even at that distance (30 miles) we could see a most wonderful electrical display and enormous clouds of smoke rolling heavenward. The scene on the street in Ermita, Manila, was laughable,—men in pajamas, women in kimonos, and dogs raising a most musical howl.

I made the first train out in the morning for the scene of the eruption. When within twenty miles of the volcano we saw a thin layer of fine gray volcanic dust

over everything and it became heavier as we approached the goal. The volcano Taal was a wonderful sight, great clouds of pure white smoke mixed with dense black made a scene never to be forgotten. We got to the lake's edge as soon as possible and found everything covered with the gray dust or rather mud. There was a bunch of constabulary, who had been there the night before, and had been scared half to death. The volcano, as you know, is in the middle of a deep lake about eight miles in diameter. The cone is about 1,000 feet high and the crater a mile in diameter. We went to the island at 2 p. m. that afternoon and found that every sign of vegetable life had been destroyed by the force of the explosion. Trees eight inches in diameter were torn apart like so much paper and the entire island was covered with the volcanic ash and mud. We went up and stood on the rim of the crater for ten minutes and experienced a charming earthquake while there. Frightened? O–o–h, N-o-o-o! The scene looking into the crater was indescribable. There I realized again, as at Niagara, the enormous forces of nature. The roar was deafening and steam, white smoke and black smoke, in which were rocks, rushed forth continuously. The rocks seemed to defy the laws of gravitation for they would go up, up, up, without any visible force to aid them. Shortly after we left the island, in fact, we were only a mile away, the entire crater blew out and the island and part of the lake were treated to a shower of rock and ashes. Had we stayed half an hour longer at the top I reckon I'd be in the happy hunting grounds now. It was a trip I wouldn't have missed for a lot. As it was, I got called for going without permission from the Big Boss.

Since then things have been gay and strenuous. Between work and play life has been as full as any one could wish. The big carnival, somewhat on the same plan as the Mardi-Gras at New Orleans, kept me busy for eight nights and I have yet to experience more genuine fun anywhere. By the way, it was in the Carnival Tennis Tournament, in which the China Coast as well as the Islands was entered that our P. R. Fanning, '08, was runner-up in singles and won the doubles paired with Gee. And P. R. is playing a cracking good game, too. Old "Hap" Adams hasn't changed a bit. He is now in the Mountain Capitol with the rest of the government office force. He made one of his typical speeches at a banquet night before last and in spite of the fact that the governor-general and several other big bugs had preceded him, he was the king pin of the evening and "brought down the house." That invitation to dinner on March 14 reached me April 4 or 5, but I am just as much obliged. If I recall correctly I was out to dinner on March 14 anyhow, and had a bully good time.

Well, so long. I'll be back to take a look for myself next year. Wonder will I find M. I. T. on Boylston Street or in Chicago. Then, too, I'll have to walk from the South Station to North Station for I'd get lost in the new subway.

—Here is another letter that has traveled some. J. W. Maxwell, mine superintendent, Central Chili Copper Company, Ltd., Panulcillo, Coquimbo, Chili, writes under date of June 21, 1911:

I am well located here and will probably remain some time, and but for the occasional calling of the "flesh pots" would be quite contented as there is work a-plenty and the finest climate in the world. In fact too much climate and not enough of the other good things of the earth. Tech men are pretty scarce in this neck of the woods, nor is there much opening for them here at present.

—A. F. Edge writes from Argo, Ill., under date of July 16, 1911:

I have moved here from New York to take charge of a few special starch processes in the Argo factory of the Corn Products Refining Company. The plant is situated about ten miles out of Chicago on the prairie; it has been running only a few months and is being largely extended. Its present capacity is about 20,000 bushels of corn and when the present work of extension is completed the capacity will be about 40,000 bushels, making it the largest plant of its kind in the world.

IV. *New Addresses*

Prof. G. A. Abbott, University, N. D.—Horace Allen, 2040 Robinwood Street, Toledo, Ohio.—Robert A. Angus, care of W. C. K. & Co., 10 Bridge Street, New York, N. Y.—W. E. Barton, 20 Curtis Avenue, West Somerville, Mass.—Frank K. Belcher, 533 Lefferts Avenue, Richmond Hill, Long Island, N. Y. —C. H. Boylston, 106 Central Avenue, Milton, Mass.—Benjamin Bullard, Garden City, Kan.—J. M. Burch, Jr., care of Farley & Loetscher Mfg. Co., Dubuque, Iowa.—H. W. Calder, 118 Neponset Street, Norwood, Mass.—H. Ross Callaway, 311 West 3d Street, Oil City, Pa.—Charles J. Carter, Forest Avenue, Orono, Me.— Harry S. Chandler, care of Solvay Process Company, Detroit, Mich.—A. O. Christensen, Box 232, Groton, Mass.—C. W. Clark, 70 Montello Street, Roslindale, Mass.—R. C. Collins, 97 Dexter Street, Malden, Mass.—Hugh Correll, 1401 North Market Street, Canton, Ohio.—R. G. Crane, 124 South Oxford Street, Brooklyn, N. Y.—Henry H. Damon, care of District Engineer, Bureau of Public Works, Iloilo, Philippines.—Leon A. Dickinson, Bureau of Tours, American Auto Club, 54th and 55th Streets, New York, N. Y.—Alexander Ellis, Jr., 28 Ellsworth Avenue, Cambridge, Mass.—Paul R. Fanning, Bureau of Science, Manila, P. I.— A. L. S. Ferrandi, 21 Rand Street, Roxbury, Mass.—J. C. Gaylord, 1120 Meridian Avenue, South Pasadena, Cal.—Geo. T. Glover, care of Allis-Chalmers Company, Schofield Building, Cleveland, Ohio.—W. R. Heilman, 1105 South 2d Street, Evansville, Ind.—Paul H. Heimer, care of Heimer & Becker, Porcupine, Ont., Can.—Oliver S. Jennings, Gray Building, Wilkinsburg, Pa.— W. W. Karnan, San Juan, Porto Rico.—Richard Y. Kennard, 349 Oakwood Avenue, East Aurora, N. Y.—George C. Lees, Easton, Pa.—Bernard S. Leslie, 44 Randolph Avenue, Milton, Mass.—Leo Loeb, 216 Venango Street, Westmont, Johnstown, Pa.—Charles L. Lufkin, 12 Sadler Street, Gloucester, Mass.— R. A. Martinez, Malecon 31 Bajos, Havana, Cuba.—H. E. McPhee, Box 272, South Framingham, Mass.—Archer C. Nichols, 130 Pearson Road, Somerville, Mass.—George H. Pierce, 1014 Independence Boulevard, Chicago, Ill.—Charlton D. Putnam, 32 Custom House Street, Providence, R. I.—J. R. Reyburn, care of Stone & Webster, Boston, Mass.—Willard F. Rockwell, 131 Wilmington Avenue, Dorchester, Mass.—H. M. Richards, 55 Vernon Street, Brookline, Mass.—Miles Sampson, 535 Hall Street, Manchester, N. H.—H. S. Sargent, 142 Church Street, Newton, Mass.—F. B. Schmidt, 1400 East 53d Street, Chicago, Ill.—Wm. A. Stocking, 2067 East 102d Street, Cleveland, Ohio. —L. W. Thurlow, 403 East 3d Street, Loveland, Col.—Robert B. Todd, 214 Grant Avenue, Medford, Mass.—Aram Torrossian, 228 Washington Avenue, Chelsea, Mass.—F. E. Towle, New York City Aqueduct, High Falls, N. Y.—George J. Venn, 37 Ledyard

Street, Detroit, Mich.—Edgar I. Williams, 131 Passaic Avenue, Rutherford, N. J.

V. *Addresses are wanted for the following:*

Allen, Edward E.—Bodenstein, Morgan L.—Brazil, Augusto de Moura.—Chen, T. T.—Chuchian, Sahak.—Cooke, G. R.—Davidson, Jas. H.—Folsom, Miss Susie T.—Franks, F. L.—Goode, F. C.—Goodnow, Frank E.—Haas, Ludwig F. C.—Harlow, John B.—Haskell, Robt. F.—Hume, Harry G.—Hatton, J. M.—Hunter, Roy.—Jay, Louisa B.—Johnson, John E.—Leong, Y. F.—Lo, T. Y.—Mohan, Arthur F.—Nicholas, U. J.—Nordstrum, Ludwig S.—Patton, Walter L.—Pratt, W. L.—Rawlinson, W. W.—Ruggles, H. J.—Seymour, Allen.

1909.

CARL W. GRAM, *Sec.*, care Walter Baker Co., Ltd., Milton, Mass.

Few letters have come in during the summer months, but now that we are settling down to business again, let us hope that many will make use of some of the long winter evenings and drop the secretary a line or two. And don't forget the insignificant sum of $1.00 for class dues.—Bill Kelly writes from Leipzig on September 21:

Just received the July REVIEW and spent the whole morning reading it. I have been having a good time all summer traveling in Germany, Switzerland, France, England and Ireland, with my father and sister. In going through the Westminster Abbey in London, I ran into Jack Elbert. We were both a bit surprised, and although we only had a few minutes to talk we managed to say a few things. After seeing my folks on board the *Olympic* at Queenstown, I returned to London and then went to Folkstone for a week where I played 36 holes of golf every day. The university doesn't open up here for another month so I have quite some time to loaf around and play tennis and golf. The field hockey team is just starting training and they want me to join in with them, but I don't care enough about the game. I'll be there, however, when the ice hockey season starts next month. Last winter I played two games with them in Berlin where we won 5–1 and in Hanover where we ran away with the game 13–2. In the former game I wasn't used to the wide rink and new rules, and hence failed to score, but in Hanover I landed the puck six times. That was fun! The goalkeeper there had never seen a real shot before and most of mine he didn't see either until they were in the cage behind him. This year we play the Canadian rules and I expect to be able to show the team here a few stunts. They play a great deal of ice polo here and in that game our team has lost one game in seven years, and that against the Oxford Canucks. Our fellows have beaten every team on the continent. Give my best regards to all the fellows you may see.

Bill's address is Haydustr F II R., Leipzig, Germany.—Mollie Scharff, 213 East Hanover Street, Trenton, N. J. reports:

I am tremendously pleased with my work which is inspecting and supervising the operation of our 95 or more sewage disposal plants. Have joined the N. Y. club as a non-resident, and saw several classmates while there last week.

—We were very glad to receive a letter from Shen dated June 7th:

I left Boston last July (1910) for China but was sorry that I could not have then notified you of the fact because I had no idea where I should be after I reached home. Now I am glad to inform you that four months ago, I was appointed by the Board of Foreign Affairs as a diplomatic secretary to the commissioner for foreign affairs at Canton. I am now living here and would be very much pleased to make this known to you and through you to all of my classmates and friends on the other side of the Pacific.

—Address Heenan T. Shen, care of Commissioner of Foreign Affairs, Yamen, Canton, China.—S. F. Barnett wrote from Seattle, Wash., and enclosed a check for *this* and *next year's dues*. Delinquents please take notice.—C. S. Robinson has moved from Chicago and is now with Roessler & Hasslacher Chemical Company, Work No. 2, Perth Amboy, N. J.—The following clipping is from a Lowell Paper:

Mr. E. E. Wells who graduated in 1909 from the Massachusetts Institute of Technology and spent a year in the employ of the Talbot Chemical Company of North Billerica, leaving that company last summer to enter the employ of the Davidson Chemical Company of Baltimore, has been made a superintendent of the Hawkin's Point plant of this company. The Davidson Chemical Company gives its full attention to the production of sulphuric acid and is one of the largest concerns in the world engaged exclusively in this manufacture. It has three plants, one at Hawkin's Point, one at Canton and one at Curtis Bay, and has just begun the construction of a fourth. These plants alone represent an investment of about $2,000,000. The Hawkin's Point plant, of which Mr. Wells is superintendent, turns out over a hundred tons of sulphuric acid daily.

—We received a card from T. A. Tillard who is roaming around in Africa. Address is care of Sudan Irrigation Service, Khartoum, Sudan.—Ray Van Etvelde writes from Vernon, British Columbia, Canada: "I have been rounding the world, and am now ranching in British Columbia."

Matrimonial

The marriage announcement of Herbert J. Stiebel to Miss Ethel E. Roberts at Los Angeles, Cal., on June 10, has been received. "Herb" is now at home at Villa Escobeda via Parral, Chihuahua, Mexico.—Kevork Madenigian was married to Miss Arshaloyse Gabriel on July 7 in Union Hill, N. J.—On July 11, Arthur E. Hartwell was married to Miss Elizabeth Haskins, in Houston, Texas.—Clarence C. Maynard was married July 19 to Miss Bertha Phillips Marvel. Maynard is with the Boston Elevated Railway in construction work on the subway at Harvard Square.—The secretary received a card from Jim Critchett announcing the birth of Doris Walton Critchett, an 8½ lb. girl, on August 2.—Burr Robinson writes:

John Grant Robinson arrived August 16th. I haven't decided what course Jack will take. He'll probably have something to say about it himself. I joined the editorial staff of the *Engineering and Mining Journal*, June 19th and am enjoying the work. Address is 505 Pearl Street, New York.

—The following clipping is from a Boston paper of August 15:

Miss Victoria Sordoni, one of the most popular students at the New England Conservatory of Music when she was a pupil there, was married last evening to Royce W. Gilbert, an instructor at the Massachusetts Institute of Technology. The bride is the daughter of Nicholas Sordoni of Wilkesbarre, Penn., and a June graduate at the Conservatory.

As she had appeared on several occasions as a soloist at musical festivals, Miss Sordoni was well known in New England. Her father, Nicholas Sordoni, was an officer under Garibaldi in the Italian revolution, and is connected with high state officials of the Italian government.

Mr. Gilbert, the bridegroom, was for several years an associate with the late Mrs. Ellen H. Richards in her researches in sanitary hygiene and economics.

—B. A. Bowman was married to Miss Norma Wells Saunders on September 9. They are living at Burton Halls, 10 Dana Street, Cambridge, Mass. Bowman is in the designing department of the Boston Elevated Railway and is at work on the Cambridge subway.—Frank Lange was married on September 14 to Miss Pauline Matilda Weber at Springfield. Address, "The Royal," 3 Salem Street, Springfield, Mass.—On September 30, George Leonard Lawrence was married to Miss Florence May Merrill in Melrose.

Harold Metcalf Glazier was married to Miss Laura Dearborn Goodwin on September 5, at Hudson, Massachusetts.—On October 18, Matthew Fletcher was married to Miss Marjorie Seeds in Christ Episcopal Church, Springfield, Ohio.

New Addresses

H. H. Bennett, Casper, Wyoming.—A. C. Besselievre, New York Shipbuilding Company, Camden, N. J.—John H. Bossong, 1226 Market Street, Wilmington, Del.—J. N. Boyce, Anaconda, Mont.—Wm. H. Camp, Weissinger Gaulbert Apartment, Louisville, Ky.—W. W. Clifford, United States Forest Service, Henry Building, Seattle, Wash.—Herbert C. Cloudman, 792 Main Street, Westbrook, Me.—Warren L. Dubois, 3 Broad Street, Freehold, N. J.—F. R. Faulkner, Vancouver, B. C.—Louis S. Gordon, 425 Geneva Avenue, Dorchester, Mass.—W. D. Green, 72 Macon Street, Brooklyn, N. Y.—C. Nelson Harrub, 19 Berwyn Avenue, Trenton, N. J.—George E. Hodsdon, 16 Chapel Street, Gloucester, Mass.—R. L. Jones, 416 West 118th Street, New York.—Christian Kurtzmann, 4 Milton Manor, Buffalo, N. Y.—George A. Morrison, Compania de Minas de Mexico, Tonichi, Sonora, Mexico. —M. Porosky, The Holtzer Cabot Electric Co., 621 Albany Street, Boston, Mass.—Charles W. Radford, 453 Algoma Street, Oshkosh,

Wis.—W. R. Reilly, Box 21, Porcupine, Ont., Canada.—K. Roehrs, Roswell, New Mexico.—Maurice R. Scharff (with the State Board of Health), 213 East Hanover Street, Trenton, N. J.—A. L. Shaw, 6 Beacon Street, Room 809, Boston, Mass.—Arthur H. Turner, 194 Ely Street, Atlanta, Ga.—John A. Willard, Wrentham, Mass.

The secretary would like the addresses of the following: Chester A. Brown, Thomas F. Carroll, Chu Shen Chow, C. H. Crawford, Daniel F. Harriman, Herbert S. Hollingsworth, Ralph E. Irwin, Frank S. James, Lewis Racoosin.

Angus E. Burt.

It is with deep regret that we announce the death of Angus Burt and his wife who perished in the shaft of the West Dome mine in the terrible fire which swept over the Porcupine gold mining region July 11. After leaving Tech, Burt worked in the Nipissing and La-Rose mines in the Cobalt district, and in 1910 was severely injured by the falling of a ladder on which he was descending a shaft. On July 14, 1910, he was married to Miss Rose Wallingford of Cobalt. Becoming convinced that the Porcupine region would afford opportunities for rapid advancement, he went there and settled at the Hallinger mine and afterwards became assayer for the West Dome.

Those who have read the account of the terrible disaster at Porcupine, can hardly realize the desperate situation of the inhabitants of that district. About seventy miners from the West Dome attempted to prevent the fire from sweeping over the cleared area adjacent to the mine, but soon found that the burning branches from the forest were being scattered far into their rear and their only hope was to save the most important of the mine buildings. This might have been effected had it not been for the fact that the pumps gave out at the most critical time and the buildings were immediately in flames.

Burt, with his wife, attempted to reach a moist place in the timbered shaft a short space down the hillside, but were hit by falling matter and carried down the shaft to their death.

1910.

John M. Fitzwater, *Sec.*, 119 Henry Street, Brooklyn, N. Y.
G. Bergen Reynolds, *Asst. Sec.*, 142 Highland Avenue, Somerville, Mass.

Letters are beginning to come from the men from different parts of the country, and the assistant secretary sincerely hopes that all those who have not written will do so in the near future. From the treasurer's report it will be seen that less than one hundred men have paid their class dues; a large part of the money

was received from the portfolio committee. If you have not yet paid the class dues, please do so at once. While the class has money in the treasury it must not be forgotten that we have a five years' reunion coming that will take several times our amount on hand.—H. P. Trevithick is chemist for the Refuge Cotton Oil Company, Vicksburg, Miss. Trevithick was married December 26, 1907, although he did not have his wife with him while attending the Institute. There was a son born November 7, 1909. —P. G. Lamson, 17 Gramercy Park, New York City. Lamson is temporarily appointed to New York City with the American Bridge Company. Permanent address: 601 North Duff Street, Mitchell, S. D.—K. P. Armstrong is with Durkee, White & Towne, civil engineers, Springfield, Mass.—A. P. Truette, who was an assistant in the engineering laboratory last year, has accepted a position with the Goodyear Rubber Company, Akron, Ohio. He is also found at 45 Marshall Avenue, Akron, Ohio. —L. Osborn French, 1712 17th Street, N. W., Washington, D. C. French is assistant examiner in the U. S. Patent Office at Washington.—Nathan Ransohoff, 2929 Vernon Place, Cincinnati, Ohio. Ransohoff is in the planning department of the Cincinnati Milling Machine Company.—G. Bergen Reynolds, 461 Wilson Street, Manchester, N. H., is with W. H. McElwain Company in the labor department.—Charles W. Wallower, American Tel. & Tel. Company, Buffalo, N. Y. Wallower has been appointed district plant chief of the American Telephone & Telegraph Company at Buffalo, N. Y.—Ernest L. Patch, U. S. S. *Delaware*, care of postmaster, New York City. Patch was graduated eighth in his class at the U. S. Naval Academy last June. He is now serving two years' sea service in preparation for his examination as ensign.—Loren N. Downs, Jr., who was an assistant last year in the electrical engineering laboratory is now in the commercial engineering department of the New England Tel. & Tel. Company. Address, 18 Burr Street, Jamaica Plain, Mass.—Charles E. Green is efficiency engineer for E. B. Badger & Sons, 63 Pitt Street, Boston. Permanent address, 42 Parkman Street, Dorchester, Mass.—E. S. Russell is with Fred Taylor the efficiency engineer. At present he is located at the Plimpton Press, Norwood, Mass.— T. DeV. Martin is in the Underwriters' laboratory in Boston. —Luke Sawyer is with Babcock & Wilcock Co., Bayonne, N. J. —H. G. Reynolds has been transferred to St. Louis. Reynolds is with the Pneumatic Service Company.—Carl F. Dohle is in Chicago erecting machinery for the Pneumatic Scale Company. —"Dutch" Rietschlin writes as follows:

> Technically trained men are scarce here and as there is much work in the engineering line, it seems to be the right place for young engineers. I am going to stay in Texas for some time and hope to become identified with the good roads' work in Bee County.

—The regular monthly dinner of the class of 1910 for the men in and around New York for the month of July was held at the Technology Club July 10, 1911. Those present were Burnham, Allen, Hodges, Brownell, Bicknell, Shaffer.

The marriage of Henry G. Hawes, Jr., to Miss Frances Habirshaw, occurred at Longwood on October 7th. Miss Habirshaw is a graduate of Miss Dow's school at Briarcliff. Hawes is a Harvard man '07, and is now connected with the Employers' Liability Assurance Company, of Philadelphia.

We hear through the papers that the class may offer congratulations to James T. Whitney. The announcement of his engagement to Miss Nettie L. Savage, was made September 26, at the summer home of Mr. and Mrs. H. W. Savage of Wakefield.

REPORT OF J. M. FITZWATER, SECRETARY AND TREASURER, CLASS OF 1910

Receipts

171 class dues @ $0.75	$42.75
Received from class day treasurer	51.38
Class dues to October 4, 1911	69.30
Received from Portfolio Committee	142.90
Total	$306.33

Expenditures

Resident secretary	$26.00
Postage	1.57
Alumni Association	95.78
Exchange on checks	1.50
	$124.85
Balance on hand	181.48
	$306.33

REPORT OF ASSISTANT SECRETARY

Receipts

Received from treasurer	$26.00

Expenditures

Card catalogue	$3.40
Printing and return postage	15.75
Total	$19.15
On hand	6.85
	$26.00

Changes of Addresses

R. B. Alling, Buffalo, Wyo.—W. C. Arkell, Hotel Manley, Fairmont, W. Va.—J. B. Babcock, Canadian Pacific Railroad Construction Department, Perth, Ont.—E. C. Ball, 298 South Street, Jamaica Plain, Mass.—Van Z. Beall, care of Byer's Opera House, Fort Worth, Texas.—Van T. H. Bien, 11 Farnum Street, Quincy, Mass.—Leroy E. Briggs, 235 Vine Street, Bridgeport, Conn.—P. Burnham, 249 Bacon Street, Waltham, Mass.—C. D. Carey, Bethlehem Steel Company, South Bethlehem, Pa.—H. S. Cleverdon, care of Shepley, Rutan & Coolidge, 122 Ames Building, Boston, Mass.—M. W. Colebrook, Summerville Boulevard, Irondequoit, N. Y.—P. J. Cyr, Litchfield, Minn.—F. A. Dewey, 49 St. Nicholas Terrace, New York City.—H. W. Flickinger, 419 Evaline Street, Pittsburgh, Pa.—H. S. Gott, 122 West 84th Street, New York City.—E. D. Greene, 1370 Burdette Avenue, Cincinnati, Ohio.—J. K. M. Harrison, 823 West End Avenue, New York City.—P. S. Hopkins, care of Dominion Leasing Company, Tangier, N. S.—R. I. Hulsizer, 310 C Street, N. W., Washington, D. C.—E. R. Jackson, 334 Montgomery Street, Syracuse, N. Y.—S. B. Lone, 113 Wellesley Ave., Wellesley, Mass.—H. Lockett, 14 West Randolph Street, Chicago, Ill.—John Lodge, 23 Stevens Street, Astoria, L. I., New York.—R. D. Macafee, 746 East Fourth Street, South Boston, Mass.—H. O. Penland, Union City, Md.—R. A. D. Preston, Goodyear T. & R. Co., Akron, Ohio.—O. R. Rietschlin, Queen Hotel, Beeville, Texas.—S. S. Rodman, Oliver Building, Pittsburgh, Pa.—L. G. Rowe, 44 Concord Square, Boston, Mass.—F. P. Sargeant, 315 Packer Avenue, South Bethlehem, Pa.—M. C. Sherman, Fairview Avenue, Bayside, N. Y.—George T. Southgate, 1502 Commerce Avenue, Houston, Texas.—F. H. Stover, Crescent Hill Filter, Jonesville, Ky.—E. Stuart, Brookhaven, Miss.—M. K. Sweet, Bridgewater, Mass.—R. T. Torralbas, 26 Correa Street, Jesus Del Monte, Havana, Cuba.—T. G. Tripp, 418 Central Park, West, New York City.—T. C. Tuttle, 21 Flint Street, Salem, Mass.—Y. T. Tsai, Columbia University, New York City.—Donald V. Williamson, 529 West 61st Place, Chicago, Ill.

1911

ORVILLE B. DENISON, *Sec.*, 49 Institute Road, Worcester, Mass.

Well! "It" has arrived! What? You don't know what "It" is? Why, mercy me, "It" is the class baby. Yep, it's here, and listen! *It's a girl!* And her name is Phyllis Hilda Glazier. Her parents are none other than Mr. and Mrs. Leslie Gordon Glazier of Brookline. Phyllis (of course we can all call the class baby by her first name for life) was born September 3, 1911. Congratulations, Gordon, my boy! Having imparted

the most "live" bit of news first, I shall now proceed to give you as much news as possible regarding the occupations of our classmates. Doubtless you have all received a letter by this time requesting some information for the completion of a class card catalogue. Copies of this letter were sent out late in September to some 634 men, or in other words, to *all* men who have ever been connected with the class of 1911. These letters were all sent to the home addresses of the men as given in Mr. Humphrey's complete file of the class. If you have not received one of these letters it is doubtless because you could not be reached through the address given in the registrar's list. Many prompt replies have been received from the different fellows, and a complete list can soon be an assured fact. In the next issue of the REVIEW the secretary hopes to be able to print as comprehensive a list as possible of the names and business addresses of the 1911 men. This list will then be added to from time to time as the secretary receives new names or new addresses.—"All the comforts of home" seems an apt description of the suite recently fitted up for occupancy by a bunch of 1911 men who are in Akron, Ohio. The "bunch" includes Alexander, Darrow, Dunlap, Johnson and Kilborn. B. Darrow in a recent letter says:

> Five of us Tech fellows and a Bowdoin fellow whom I have been rooming with have got a corking suite of rooms at 95 Charlotte Street. We have the entire third floor of a private house, with a room at our disposal on the second floor. The room we are to use as a living-room was originally intended for a billiard-room and has one of the dandiest views from its windows, overlooking the Cuyahoga Valley, I ever saw. The man who owns the house is a Cornell '99, man and is certainly a dandy.

—This bunch of "live" 1911 men had the Technology Club of Northern Ohio as its guests at a dinner at the Akron Country Club on October 14, and a "large" time resulted.—"Don" Stevens and "Mike" Greenleaf are located in Cleveland with the Peerless Motor Car Company. "Don" had the misfortune to break his arm while cranking his Buick shortly after graduation, but he reports that it has mended in fine shape and is as good as ever now. He says, too, that he has a "fine job with roll-top desk and all the comforts of home." Even on the return postal recently sent out, "Mike" Greenleaf made an heroic attempt to drum up trade by offering to the class this motto: "Before buying a motor car, consult with us!"—"Lil' Herbie" Fryer is foreman of the drafting room, economizer division, for the B. F. Sturtevant Company in Readville. Yes, he and Governor Foss are now interested in the same concern! Bert says, "The government never was in it—I'm just coining money!"—"Dave" Allen, Course II, has invaded the village of Frankford, Pa., and secured the assistant superintendency of a foundry and machine shop. He claims that there are sometimes as many as seventeen or nineteen men working at one time in

the shop. Honest!—"Jim" Duffy and the secretary are with the American Steel & Wire Company in Worcester, learning the business at the Electric Cable works. "Jim" is looking the same as ever and is nightly "startling" Worcester with his inimitable haberdashery and clothing creations. He says he's "still single and likely to stay so while in Worcester."—Harrington, Course I, is a transitman with the Erie Railroad. The poor old "Erie" comes in for still another rude jolt when Harrington reports:

> Abundance of heat, abundance of mosquitoes and dearth of summer girls. Always and ever thus on a R. R. location, I am told.

—"Pop" Hufsmith, the "Texas ranchman," has retired, according to latest dispatches. He is at his home in Palestine, Tex., and writes:

> I expect to live here "till Death," but I will be back for the reunions.

That's the proper spirit, isn't it?—Paul Kellogg, Course IX, merely reports "still unmarried." He is with the Larkin Company in Buffalo.—Roger Loud, Course VI, is assisting in the installation of a large high-pressure water-gas system for the Old Colony Gas Company.—R. E. Morse (not REMorse) simply reports "Nothing doing yet!" Draw your own conclusions!—Gordon Wilkes, Course II, is back at the 'Stute as assistant to Professor Norton. He says his moustache (?) has "departed this life."—Tuck, Course VI, has joined the ranks of scientific journalists and is an assistant editor of the *Electric Railway Journal* in New York City.—"Bobby" Wood briefly describes his occupation as UNMARRIED (all capitals!)—"Joe" Aaron, Course VI, is taking the apprentice course with the Westinghouse Company in and about Pittsburgh. He writes:

> I am the only man of the class that entered Tech four years ago who is with the Westinghouse people. There is now a course mapped out for each apprentice which takes him through various departments of the shop and requires 6 hours a week home studying and 4¾ hours a week (taken out of the company's time) for class work, studying catalogues, etc.

—Hall, Pepper, "Doc" Wells, "Johnny" Wilds and Oswald Stewart are all with the Factory Mutual Insurance Company in the Hub.—"Ken" Faunce claims as his occupation "still plugging for a degree" and gives as his business address "Lowell laboratory—once in a while 6 Lowell." He philosophizes:

> Of course I should like to get married, but how can I when I am still a student?

—Charles F. Hobson, would-be chemist, and better known as "Hobbie" appears to be still playing the rôle of Philosophy in the great morality play "Every-Tech-Man." List to his latest:

"It's a hard world Dennie, when your hair is short." Hobbie's self-confessed occupation is *dilletante et litterateur.* Officer, call out the Tech battalion!—"Phil" Kerr didn't go on the stage after all. No; he's a special apprentice of motive power with the Pennsylvania Railroad and claims that news of him may be somewhat lacking in interest for a time, as his contract calls for four years' apprenticeship.—George Forristall, whom we remember as erstwhile business manager of *The Tech*, is now manager of the classified advertising department of the *Boston Traveler.* In one of his usual concise "statements" he says:

Not married yet, but almost wish I was. Not even engaged yet. Just looking around!

—"Joe" Harrington, Carl Barnes and Bill Pead, all Course VI, are connected with the signal department of the New York Central & Hudson River Railroad, being located near Poughkeepsie.—Symmes, Course V, was in Washington, D. C., all summer with the Bureau of Standards and reports that it was "hot enough to shame Pluto." He is now with the duPont de Nemours Powder Company in Wilmington, Del.—"Syd" Alling contemplated returning to the 'Stute this year as an assistant, but instead has accepted a position in the engineering department of the Rochester (N. Y.) Railway and Light Company and ventures the assertion that "work is like vacation after going to Tech."—Batty, Course II, is an instructor in the Lowell Textile School and has taken up his residence in the spindle city.—"Bob" Haslam, Course X, is back at the 'Stute as an assistant, as is Zimmerman.—"Jack" McAllen and "Aurora Borealis" Grossman are back in similar capacities in the mining department.—"Max" Kushlan, Course VI, is with Stone & Webster. His tale is not what one would ever call a "hard-luck" one. Hearken!

Was on the job June 8, right after graduation. Got married June 29 and have not regretted this act as yet. Am living on low salary, but high hopes.

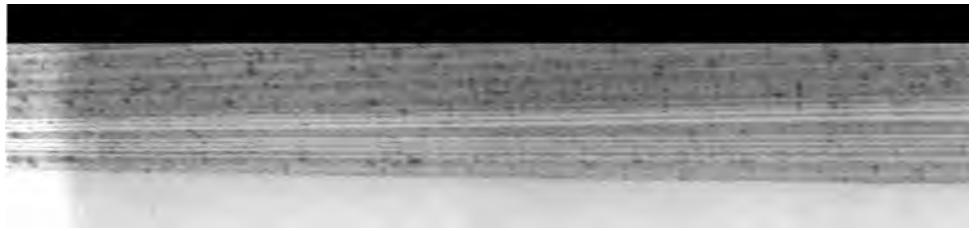
—Listen to what "Art" Leary, Course I, says: "Got my job solely on Tech's good reputation." He is foreman on work on the city reservoir in Minneapolis, Minn. Yimminy Yee!—Percy Rideout, Course I, has made a startling discovery! He is with the engineering corps of the Cairo division of the Big Four Railroad, located at Mt. Carmel, Ill. (wherever that is). He says: "They never heard of Tech down here!"—Charles Hudson Sayre Merrill, he of the longitudinally lengthy cognomen, ought to be a daffydil editor of a monthly publication in an insane asylum. Just listen, gentlemen, and ponder carefully—the whole world awaits your verdict.

What's the day we celebrate? November 11. Why? Because it's 11-11-11!!!

—GUILTY!—"Bill" Burleigh, Course II, has "signed up" with the Towle Manufacturing Company in Newburyport as a mechanical assistant and writes:

Have seen some of the "youngsters" going back—would like to be with them. I've hardly had enough.

—Walter F. Connolly is now instructor of mechanical drawing in the Lowell Industrial School at Lowell, Mass. He offers the following informal appeal to 1911 men: "Would be glad if any of the members of the class could give or obtain material for Lowell Industrial School."—On Monday evening, September 25, a pleasant evening was enjoyed by a number of our men who have located in and around New York City. On that evening the Technology Club of New York held a dinner and reception for 1911 men. A good representation of 1911 men was on hand and an excellent time was reported by all who attended.—The engagement of H. L. Robinson to Miss Frances Spaulding, Wellesley, 1911, was announced on September 22. "Robie" is located in Buffalo with the Aberthaw Construction Company.—"Bill" Warner and Otto Shenstone are working for the City of Vancouver in British Columbia, on the pay-roll of the municipal civil engineering department.—"Dick" Ranger is running the Tech Press Association this year, with office at 39 Trinity Place. Among his associates are Seligman and Pearl.—"Bill" Humphreville is busy contracting in Houston, Tex.—The secretary would be glad if any one can furnish information concerning the following men, particularly as to their present addresses: A. B. de Arujo, J. B. Cheney, C. C. Clark, G. N. Harcourt, I. Housman, I. S. James, W. B. Jones, E. H. Kruckmeyer, Abram Morris, A. Pauvolid, and Benjamin Robinson.—Don't forget that whenever you stumble across anything of interest to the other members of the class, obey that impulse! Sit right down and drop a line, even a postal, but much better a letter, to the secretary at 49 Institute Road, Worcester, Mass.



The Technology Review

VOL. XIII DECEMBER, 1911 No. 9

SITE PROBLEM MAY BE SETTLED SOON

Report of Highway Committee of Cambridge City Council is favorable—Final Action expected to be taken at Council Meeting, December 18

At a meeting of the Highway Committee of the Cambridge Common Council, held December 12th, a decision was made in regard to the Technology site which paves the way for favorable action on the part of the city government. The committee decided to report favorably upon the petition of the Ames estate, the principal owners of the Cambridge tract, asking that Amherst Street be closed, provided the Institute of Technology will give to the city the land needed to continue Ames Street to the Charles River roadway, and that the city shall receive the sum of $10,000 with which to widen Vassar Street and make the other changes necessary.

Among those who spoke at the hearing were Engineer D. M. Hastings, Superintendent of Streets Edward W. Quinn, Chairman Benjamin F. Fallon, of the Board of Assessors, City Solicitor James F. Aylward, Assessor Jeremiah Donovan, Everett Morss, '85, and Henry W. Beal representing the Institute. Engineer Hastings explained the plan to cut Ames Street through to the Esplanade and to construct a new street from a point on Ames Street to Vassar Street at the rear of the property thus providing another outlet to Massachusetts Avenue.

The newspapers state that the report of the Highway Committee will be acceptable to the Technology interests and that the report will go to the city government at once. It is not likely that this will come up for action in the City Council before December 18. It is reported that there will be little or no objection to having the matter settled in accordance with the report of the Highway Committee.

The November TECHNOLOGY REVIEW gave an account of the first hearing before the Cambridge City Council, November, 14. The second hearing took place November 21 when more than thirty speakers favored the closing of the streets on the Charles River Basin site and very little was said in opposition.

Dr. Henry O. Marcy, who is one of the owners of the tract which the Institute would like to purchase, declared that the real estate venture turned out to be a loss, the cost of filling the land along the river being in itself more than the price the Institute would pay for it. He believed, however, that it would be a great benefit to Cambridge to have the Institute come there and was willing to make a sacrifice of his property for this reason and in order to benefit the Institute.

In replying to a statement that Har-

vard University was a burden to the city of Cambridge, and that Technology would also be, Theodore H. Raymond, a prominent real estate agent of Cambridge, said that real estate in the vicinity of Harvard Square was of higher value than in the vicinity of Central Square, the main business section of the city.

The opposition to another institution of learning in Cambridge, which developed at the first hearing, disappeared almost entirely and in addition to the above speakers many prominent citizens urged the City Council to pass the order discontinuing the streets on the property in order to insure the coming of the Institute. Apparently the only objection raised was on the part of a few of the owners of factories in the immediate vicinity who wanted a convenient means of reaching Harvard Bridge.

Attorney Henry W. Beal, who represented the Institute, said that these objections had received consideration and that the Institute was willing to give land to build a street that would remove the principal objection, if the city would allow it to be done. Attorney Beal also presented a petition signed by a large number of the members of the Tax Payers Association favoring the closing of the streets.

The session lasted until after midnight when the petition for closing the streets was referred to the Committee on Highways.

On November 23 the final arguments were made before the Committee on Highways by Mr. Beal and Everett Morss, representing the Institute. Mr. Beal suggested that Ames Street be extended to Charles River Road and that the latter be open to heavy traffic in order to give manufacturers an outlet from Main Street to Massachusetts Avenue. This would practically take away the objection to the abolition of Amherst Street. Mr. Morss told the committee that the Institute stood ready to widen Vassar Street to such an extent as might be desired. He explained the difficulties encountered in choosing a new site and stated that location in Cambridge had not been considered favorably at first, but after receiving a number invitations from representative ci bodies, the matter had been looked i carefully and the Charles River Ba site chosen. He urged that the mat be decided at once so that the campa for funds might be begun as soon possible.

It was expected that the Commit on Highways would make a report at meeting held December 4, but the me bers were unable to reach an agreem at the meeting and after long discuss it was voted to postpone the mat until December 14 and invite City En neer Lewis M. Hastings, City Solici James F. Aylward and Chairman B jamin F. Fallon, of the Assessors Bos to meet with them.

Public opinion in metropolitan Bos is unanimous in its commendation of proposed location of the Institute in Ca bridge. The possibilities of the devel ment of the Charles River Basin un the stimulus of the proposed group buildings such as the Institute will ere has created general enthusiasm as t discussion of the matter has progress and it seems extremely unlikely that t Cambridge authorities will neglect take advantage of the opportunity whi the Institute offers. Architects are pa ticularly interested in the project whi can be made to contribute materially the architectural beauty of the tw cities.

One of the possible features which h found favor with everyone is an impre sive water approach with curved piers o each side and terraced steps leading up t the main entrance of the Technolog group. As a matter of suggestion, Pr fessor Despradelle, of the architectur department of the Institute, who co siders the site one of the finest in th world for truly artistic developmen contributes a sketch suggestive of wh might be done in a general way. Th sketch does not, of course, consider th exact details of the structure, but do take into consideration the space an grouping of the separate buildings. reproduction of this sketch is shown o the next page.

A suggestion of what the Institute can do on the Cambridge Site

H. W. Beal, Corporation council for Technology, in a recent interview said that while the closing of the street would seem at first to entail a loss of the $4900 spent for improvements, as a matter of fact to make the street passable would require a further expenditure of about $9,000, and this would all be for land which would not be used for some time, owing to the many restrictions placed by the city upon the plot.

In regard to the possible use of the other streets, Mr Beal said:

"Ames Street might be continued to the boulevard, and as the boulevard is double, the inner side could be used for heavy teaming, if the Park Commission would grant the request, the interior land would be opened for heavy teaming, which is what the manufacturers desire. In regard to Vassar Street, we suggest that the city wait until there is more definite need of it, and when that time comes it is probable that the Institute will furnish the necessary land from the back of the site."

Discussing the assertion that the city would lose $15,000 yearly in taxes, Mr. Beal said the restrictions made any claim on such a large return hardly possible. "In 1893, when I first came to Cambridge as a Harvard man," he said, "that land was only mud flats and ponds. The city began to fill in this waste land, but when the job had been completed and the Charles River Embankment Company started, the city had restricted the land to buildings so low and so expensive that immediate use was impossible. Single dwellings must not cost less than $5,000, exclusive of land value, and apartment houses must cost at least $3,000 per apartment. No building for livery or for mechanical use can be erected. The proximity of so many factories makes those who have the means to erect such expensive buildings look elsewhere.

"A population centred about itself is what is needed in this locality; one where it will be unnecessary to make several trips to Boston during the busy times of the day. The Institute of Technology is just such a community. With its interdependent activities centred on the Charles River site, it will make a magnificent approach to the city of Cambridge."

Great Interest in Coming Election

The importance of alumni influence in the Corporation has increased the interest in the election of candidates for the office of term member and in the present election the votes polled will probably be 15 to 20 per cent. greater than the vote last year. Representatives have been nominated both from New York and Chicago, and alumni in the two cities are prosecuting a vigorous campaign in favor of their candidates.

Chicago men report they had the best meeting ever held there, November 23, when a ratification dinner was given to Louis A. Ferguson, '88. Over 60 men were present. A large and enthusiastic dinner was also given by the New York club to J. Waldo Smith, '87, who is the candidate from the New York district.

Freshmen Win Tech Field Day

The rivalry that always existed between the freshmen and sophomore classes had its outlet in a struggle between their respective teams on Field Day, November 3, and perhaps never before have the two classes been so evenly pitted in point of athletic strength, skill and endurance. It was a crisp, clear, beautiful day and called out one of the largest audiences that had ever assembled for the Field Day sports. The result of the contest was not known until the last tug-of-war pull which was necessary to decide the fortunes of the day, and as this was the last event on the program, there were plenty of thrills for the sympathizers of the opposing classes all through the afternoon.

To give the occasion a much added interest, the annual cross-country race between Harvard and Technology was finished at the field. It proved to be a victory for Harvard by a score of 32 to 47.

The first event on the program was a tug-of-war between the sophomores and freshmen. This proved to be a walkaway for the freshmen who pulled their opponents over the line in 1 1-5 minutes. In the meantime, the two teams had begun to fight their battles on the gridiron, waging a very even contest against each other, the fate of the game inclining first toward one goal, and then toward another until the time for the first half had elapsed and no score had resulted.

The second tug-of-war pull proved to be a complete victory for the sophomores and then followed the relay race in which the sophomores were again victors, breaking the track record in 4 minutes and 57 2-5 seconds. Meanwhile, however, fortune had favored the freshmen on the football field. The sophomores had been penalized several times and when the freshmen had succeeded in working the ball within 15 yards of the sophomores' goal, O'Brien, for the freshmen, placed a drop kick over the bar. The fourth quarter of the football game was hard fought; the freshmen, perhaps, having a little the best of it, but the sophomores defended their goal so well that ther was no further score in the game. Vi tory depended on the last tug-of-wa pull and when the freshmen slowly bega to absorb the rope from the sophomore the partisans in the stands broke loo with a tremendous cheer and did a snak dance down the field..

The cross-country race was practicall ceded to Harvard before the start. Be son was running far from his old form taking sixteenth place.

Chinese Students Win Debate

The Technology Chinese Student Clu was recently victorious in a debate wit the Chinese Club of Amherst College, o the question, "*Resolved*, That Industri Development is More Important f China than Military Achievements. The banner received by the winning tea from the Amherst Chinese students, a very gorgeous affair in red, blue an gold. On it is written in Chinese cha acters the names of the debaters and th inscription of the Chinese Alliance. I the center is the motto, "The virtuou will be sure to speak correctly, but thos whose speech is good may not alway be virtuous."

Trip of Musical Clubs

During the last few years musical interest at Technology has vastly increased and much musical talent has been developed in the musical clubs. Encouraged by the strong support given this year, the musical clubs are planning to make a western trip from January 25th to January 28th, possibly going as far as Chicago. The enterprise, of course, depends on the attitude of the alumni in various cities where it is planned to give concerts. Two years ago the trip was a decided success and reflected great credit on Technology undergraduates as well as Technology alumni.

The Glee Club should add to its repertoire that touching old song "Shall we meet beyond the river?"

ORGANIZING FOR EFFICIENCY

Class Secretaries to study the most effective methods of keeping former students in touch with Technology

The annual meeting of the Association of Class Secretaries November 27 was a well-attended and euthusiastic one. Professor C. Frank Allen was made chairman of the meeting.

In the course of discussion throughout the meeting it became very evident that there is particular work for the association to do and the members intend that the work shall be done and done properly, making the organization a valuable auxiliary to the Alumni Association. Everett Morss, '85, a member of the site committee, gave the history of recent negotiations connected with the site, bringing the matter down to the calendar date. The speaker touched on the matter of housing the students and showed that there was an enormous tract of medium price land well located and close to the Charles River Basin site. The secretaries seemed most interested, however, in the general statement made by Mr. Morss regarding the fund which is to be raised among the alumni just as soon as the site question is definitely settled. He referred to the liberal way in which Tech men had met the request for funds in the past. He felt sure that the results of the appeal soon to be made would be very satisfactory. He believed that Tech men would not raise the query, "How much will it cost me?" but would consider the question, "How much can I give?"

Mr. Morss outlined the assistance that the class secretaries could give to this movement and he was given hearty assurance that they were ready to help in any possible way.

In addition to the alumni fund a campaign for money from other than Tech men is being planned. The speaker said he had absolute faith that we could put up a plant not only in keeping with its dominating position in the center of population of Boston, but at the same time the most effective plant in the country for turning out scientifically educated men.

Doctor Noyes, president of the Alumni Association, who was then called upon by the chairman, referred briefly to some of the recent accomplishments of the Alumni Association. The first, he said, was the successful outcome of the campaign for State aid. The result was due to the wonderful efficiency and organization of the alumni and it was the first absolutely essential step in the new development of the Institute, without which the Corporation would not have felt safe in planning for the new site and new buildings.

The second important recent event was the Congress of Technology which was initiated by one of the alumni, a member of the class of '85, and was largely carried through by alumni. This event brought the Institute to the attention of all the country in a very dignified and effective way.

The third important item was the Summer School of Civil Engineering. The establishment of this school on its own land at East Machias, Me., was made possible by two alumni, one of them a member of the class of '93 and the other of the class of '85. The summer school camp means more to the students than most of the alumni realize. The social advantages are hardly less important than the ideal conditions for professional work.

Doctor Noyes also mentioned a few of the other activities of the association which were begun at a more remote date. These included the Tech Union, which makes a satisfactory meeting place for students; the Register of Former Students, which was suggested and largely financed by the association; the Technology Fund; the successful campaign to

secure term members representing alumni on the Corporation, and financing President Maclaurin's trip to other local associations. Doctor Noyes stated that he believed we had undoubtedly the most thoroughly efficient alumni organization in the country. He referred to the satisfactory way in which the Alumni Council, consisting of fifty or sixty members, were able to transact the business of the association at its monthly meetings, and he spoke with feeling of the service that the Association of Class Secretaries has rendered. He believed that the organization could be made still more efficient if the members of the association would study their own work and the work of the other secretaries, and also devise the best possible methods of getting former students into touch with the Institute. He hoped that this would be taken up seriously and in the immediate future.

Doctor Noyes' suggestion met with the instant approval of the members, and Chairman Allen called upon each secretary in turn to rise and tell about the activities of his class, how it was financed, the attendance at meetings, contributions to the TECHNOLOGY REVIEW, and plans for the future.

The following hour was a most interesting one. The experience of some of the secretaries gave new suggestions to others and when the last man had spoken, N. J. Neall, '00, moved that the Chair appoint a committee to study plans to increase the effectiveness of class secretaries' work; this committee to send out blanks to each secretary, asking for such information regarding his class and the work connected with it, as may be deemed desirable. The motion was carried and the chairman appointed the executive committee of the association which has power to increase its membership for such purposes.

The committee will meet very soon and another meeting of the secretaries will be called as soon as possible for the purpose of acting upon the report of this committee.

The alumni banquet occurs January 3.

Efficiency in the Conducting of Scho

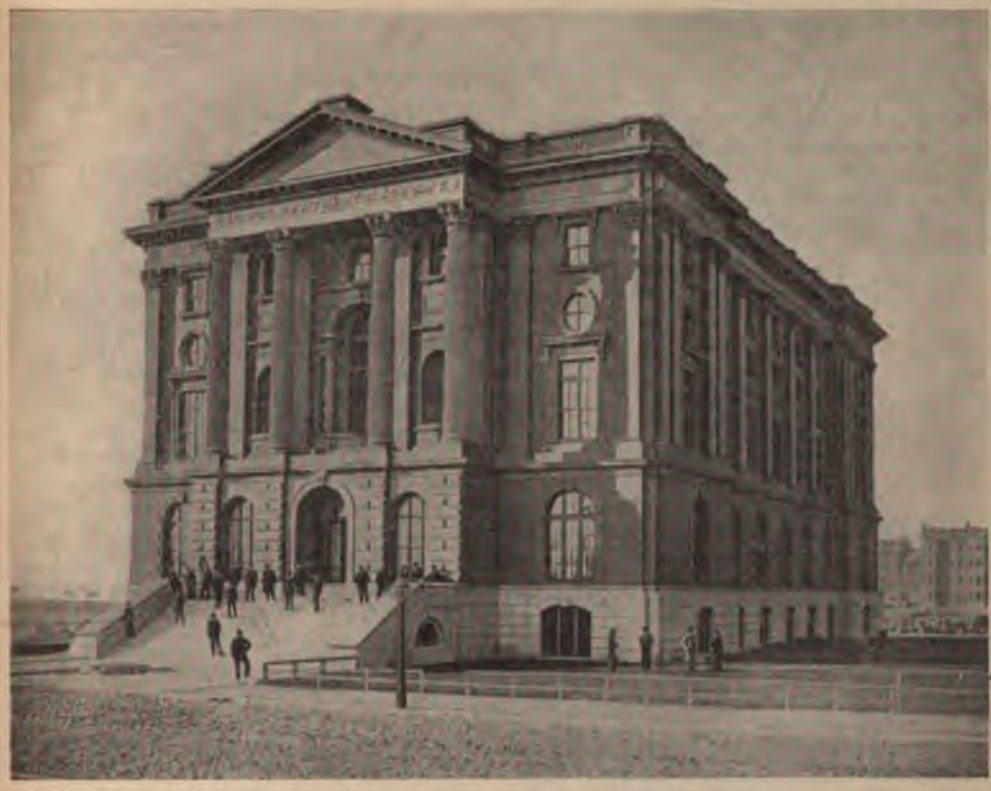
In its last issue the *School Board Jou nal* of Milwaukee called attention to example of unusual skill in prepari the budgets for the school board of t city of Grand Rapids, Mich. This wo is in charge of Thomas D. Perry, '0 secretary and business manager of t public schools there. During four yea the estimates prepared by Mr. Perry d not exceed one half of one per cent. the actual cost of conducting the schoo This unusual result was due to the effe tive organization of the office syste connected with the school board and t introduction of scientific methods in pu chasing material and in the maintenan and repair of buildings. Mr. Perry h recently resigned to take charge of a lar wood-working establishment.

Marriage of Doctor Bigelow

Dr. Robert Paine Bigelow, librari at the Institute, was married on Noven ber 9 to Miss Caroline Evans Chas daughter of Mr. and Mrs. P. Coggesha Chase of Milton, at the Church of th Holy Spirit, Mattapan. Rev. Alan Mc Lean Taylor, the rector of the parish performed the ceremony, and the brid was given in marriage by her father Miss Mary A. Chase, sister of the bride was maid of honor, and W. F. Benedict Smith of Boston was best man. Th ushers included Professor G. Howard Maynadier of Harvard, Archibald Tis dale, Maynard T. Hazen and Talbot C Chase, a brother of the bride. A recep tion at the home of the bride's parent followed the ceremony.

Newton M. I. T. Scholarship Awarded

The newly established Newton schol arship at the Institute of Technology was awarded last June to Donald Belcher a graduate of the senior class of th Newton High School. Mr. Belcher was also given a bronze medal for th best essay in the Civil Service Essay Contest and was included in the list o honor students.



The earliest picture of the Institute, showing the nearest houses on Beacon Street. How much this edifice had to do with the building up of the Back Bay district can only be conjectured. The Cambridge authorities should take this into consideration.

Meeting at Providence

The Technology Club of Rhode Island held a smoker at the rooms of the Providence Art Club on the evening of November 11. There was an attendance of thirty-five.

President James G. Woolworth, '78, presided and after the usual formal business was disposed of a report was read which had been prepared by Professor E. B. Homer, '85, the club's member of the Alumni Council, giving an account of the proposed Cambridge site of the Institute and telling of the Summer School of Civil Engineering which had recently been opened.

The club was entertained by a very interesting account of the trip which was made by three daring navigators in the twenty-six-foot yawl, *Sea Bird*, from Providence to Rome by way of the Azores during the past summer. Fred B. Thurber, '06, who was one of the navigators, is a member of the club and told of his experiences.

Architectural Engineering Society

Students in the architectural engineering option have found it desirable to organize an undergraduate society at the Institute, and have received the necessary permission from the Faculty. A constitution has been adopted and officers chosen. The membership is made up not only of those who are taking the architectural engineering option in the course of architecture, and who are candidates for a degree, but any student in good standing in the architectural course may become a member.

Perkins' Kites Are Winning Out

Samuel F. Perkins, '09, is persistently advancing his scheme of using kites for army and navy reconnoissance and is making considerable impression on army and navy experts. Early in the year he had the United States Cruiser, *Pennsylvania*, at his service on the Pacific Coast. When two miles out at sea, a navy lieutenant was sustained more than four hundred feet in the air on a chain of fifteen kites and was able to make observations covering a range of forty miles.

This and other related tests were made the subject of a long report to the Secretary of the Navy, and Perkins now has at his service for use whenever he requires it the scout ship *Salem*, one of the fastest in the Government's service, to pursue his experimental work. He operates six-sided, or double tetrahedral, kites, and their extreme dimensions are eighteen feet. Naturally they have considerable sustaining power. They look like mere dots in the air when they are in service, but their up-lift requires a manila rope of more than one half of an inch in diameter, the total pull thereon with a man in a boatswain's chair being more than two thousand pounds.

At the Nassau meet, Perkins had a detail of twenty United States regular army pupil soldiers to assist him, to whom he gave instructions in kite-flying service.

National Nights at Cosmopolitan Club

The first meeting of the national chairmen of the Technology Cosmopolitan Club was held November 1. It was decided to hold national evenings as follows: Chinese, November 18; Latin-American, December 16; American, February 10; Japanese, March 23; European, April 13, and a second Chinese evening on May 4. The club will hold a New Year's dinner at the Technology Club, December 31, and an afternoon tea will be given in April during Junior Week. The club has received letters from President Taft and from Admiral Togo while he was in this country, congratulating it on the excellent work it has done in stimulating the cordial relations between representatives of different nations in this country.

Washington Society of the M. I. T.

The first informal dinner of the season was held at the University Club on Monday, November 6. A young cloudburst just at 6.30 kept a good many of the fellows away, but twenty managed to get there. An illustrated smoke talk was given by Marshall O. Leighton, '96, chief hydrographer of the Geological Survey, and a member of the society. Mr. Leighton is the authority on the waters of this country, and an expert on water supplies for power. Among other interesting things, he told of the methods of measuring the flow of streams, and the vast possibilities that lie in our unirrigated and undrained lands. A general discussion followed, and the meeting was voted a good one in spite of the weather.

Tech Cross-Country Defeats Brown

Technology was able to score a victory over Brown, November 15, in the cross-country run held at Providence, by a score of 40 to 45. The first six men in each team were counted, the first man getting one point, the second two points, etc., the team with the smaller number of points winning. The event will, perhaps, be an annual fixture between the two colleges. Each college had twelve men entered and the distance was four and one half miles.

Professor Cross.—"When I rub this vulcanite rod with this catskin (cat-calls and caterwauling to an unusual extent), it becomes charged with negative electricity, but, when I rub this glass rod with this piece of silk (enter silk handkerchief from righthand coat pocket), it becomes charged with positive electricity. And, fortunately, gentlemen, the silkworm has no characteristic utterance."—*Technique, 1912.*

RESEARCH DURING THE SUMMER

Valuable Contributions by Institute Professors to Commerce and Manufacture—Researches cover a wide range

A recent issue of *The Tech* gave a summary of the research work that has been conducted at the Institute during the summer as follows:

"Research work at the Massachusetts Institute of Technology has been the leading feature of the summer months. In the department of physical chemistry, headed by Dr. A. A. Noyes, investigations have been in progress for a number of years on the effect of salts on the solubility of other salts. This work was completed this summer by Dr. W. D. Harkins of the Institute at the University of Montana, and Dr. W. C. Bray and Mr. W. Winninghoff, and was brought into shape for publication in the *Journal of the American Chemical Society*. It is a very important contribution from the Institute's laboratories, and represents progress in a field where little systematic work had been done. This department will continue its work on the properties of aqueous solutions, free energy and electromotive force this fall.

"In the research laboratory of applied chemistry the study of the corrosion of iron with particular regard to the action in water pipes has formed the main theme in summer work. At present the work consists largely of the design of the proper method of heating water in water service systems to drive out all oxygen from the water. This oxygen is the agent without which rusting in the pipes would not take place. Its removal is, therefore, the great secret of success in preventing corrosion.

"In the biological laboratory the question of the contamination of eggs has been taken up both at the Institute and with the Seymour Packing House in Topeka, Kan. A model hennery has been set up in the laboratory for the investigation of the subject from the anatomical side of the question, as well as to get absolutely fresh eggs.

"In the physical laboratories, Dr. D. F. Comstock has been doing considerable work with the selenium cell, a light-sensitive, electric control; first, in regard to its use as an indicator for lighthouse work, and secondly, as an instrument for the study of binaries—double stars. This is an adaptation of Professor Pickering of Harvard's use of a bolometer, where heat is the controlling function. The selenium cell is used to obtain the two points of maximum illumination designating the two separate star components received by the telescope and analyzed by a spectroscope. The general statistics in regard to color of stars seems to indicate that most of the far distant ones appear red. This effect would seem to indicate that there is matter in the intervening space which causes absorption of the shorter and more easily lost blue wave lengths of light. Doctor Comstock is investigating this as, if so, diffraction and dispersion should be visible.

"Doctor Hollnagel is continuing his work in the Institute on the investigation of extra long wave lengths of light beyond the red end of the spectrum.

"Extensive investigations were carried on in the laboratories for chemical research. These experiments were carried out chiefly for private concerns, and the results are consequently kept secret. However, it is interesting to see what kind of work was taken up. At the beginning of the summer a new transformer and switch-board were installed, thus permitting the use of more electric furnaces, each furnace capable of producing all degrees of temperature.

"An efficient means for recovering the by-products from waste palm oil was found by one of the experimenters. This means a saving of thousands of dollars a year to the tin-plate industry. Formerly this oil, after the tin-plate had been run through it, was thrown away, or sold

for a very small sum. By selling the by-products obtained from the oil, a much larger amount of money may now be realized.

"Another saving factor was found by the utilization of a product obtained from wool grease. Previously wool grease was a nuisance, it being entirely wasted. Now it is hoped to find a commercial use for it.

"A process was found by which glycerine may be obtained in other ways than by the use of animal fats. The results show that glycerine may now be obtained at a reduction in cost, thus lowering the cost of the product itself.

"An important result was accomplished by obtaining an electric insulator which will stand the temperature of molten iron. By the use of this insulator heating-stoves may be cast around the resisting element.

"A structure-study was made of the coating of galvanized iron. Not only was a new means found for testing galvanized iron, but a tight coating was discovered which will not crack upon bending the iron. This means a prevention of the corrosion of iron.

"An investigation was successfully carried out by which a paint has been found which will protect iron best from corrosion. These investigations will be of inestimable value to the concerns benefited by them."

Action of Sophomores Commended

Although the sophomores as a body ceased paying unappreciated attentions to the freshmen on the night of the freshman dinner, several years ago, there has been an annual skirmish of yearly diminishing importance which has generally resulted in the ducking of two or three sophomores in the Frog Pond on the Common. This fall, the sophomores decided to put an absolute stop to this child's play and the freshmen were unmolested at their dinner which was held early in the year. The action of the sophomores has received a great deal of favorable newspaper comment. The following is taken from the *Springfield Republican:*

"The attitude that has been taken by the students of the Massachusetts Institute of Technology is one that is worthy of commendation as a step on the part of a college where 'efficiency' is the watchword against the silly and useless personal combats between the entering class and those already in the college," says the *Journal of Education.* "For a number of years the student body, which here more than in any other institution takes the initiative in matters of change or reform, has been struck by the folly of the older custom, and, one after another, objectionable practices have been dropped from the list. Formerly the night following 'freshman's dinner' saw a free fight, long continued in the grounds about the athletic field in Brookline, which was among the most sanguinary of any of these college class clashes which popularly attach the adjective 'bloody' to the day of their customary occurrence. The sophomores decided at a recent meeting to discontinue even the capture of the freshman class president on the evening of the dinner. The class of 1914, therefore, takes its place with its immediate predecessor in this very practical reform. Henceforth it will be 'All Tech; no class,' on occasions which with many other colleges mean serious strife and possible injury. All honor to Tech students for their stand."

Meeting of 1906 in New York

At the November meeting of the class of 1906 held at the Technology Club, 17 Gramercy Park, New York, nine members were present at the first revival meeting of the season. The men present were Brown, Kendall, Fouhy, Keleher, Littig, Newton, Sherman, Buchanan and Hinckley. The report continues: "The time-honored features were observed to the letter, and the pool game as usual was a pronounced success—for the winner. We want more men to come to these affairs, for the class's sake, for the club's sake and for their own sake. Give us a try,—come to our December informal."

Successful Meeting at Lawrence

The second annual field day of the Technology Club of the Merrimack Valley was held on the afternoon and evening of October 31 at the house and grounds of the Merrimack Valley Country Club, Lawrence. Had the weather been pleasant there would have been a larger attendance in the afternoon. As it was, however, about ten members toured the golf course piloted by R. A. Hale, '77, among them being F. H. Fay, '93, J. W. Rollins, '78, and Bursar Rand of the Institute. Many more arrived in the late afternoon, and enjoyed the bowling, billiard, smoking and reading rooms. President Maclaurin and H. A. Morss, '93, reached the club house about six o'clock and an informal reception to the former was held from then until seven o'clock.

Dinner was served in the main dining room, the members being grouped at small tables, which arrangement made the gathering more social, and promoted the informality of the occasion. Forty-five Technology men including the five guests from Boston sat down; and in addition there was a representative of each leading Lowell and Lawrence newspaper present, making forty-seven in all. As usual, the dinner was preceded by the long Tech cheer for Doctor Maclaurin.

After the dinner President E. B. Carney of Lowell, introduced Doctor Maclaurin with a few preliminary remarks. In opening, the President thanked the members of the club for their loyalty to the Institute, and especially for the work which they did during the campaign for the $100,000 yearly grant from the state. He then explained at some length how much the success of the campaign meant to Tech and outlined the present situation as regards the site. He emphasized the point that present conditions were vastly different from those encountered when the Institute was young and that broader views must be taken and broader methods employed in the solution of the problems now to be met.

J. W. Rollins was next introduced as the coming president of the Alumni Association. He spoke on the importance of the work being done by the association; of his own interest in Technology affairs, and the urgent need during the next few years of the support of every former student.

F. H. Fay and Mr. Rand both spoke of the new Summer School of Civil Engineering located on the coast of Maine, Mr. Fay outlining the plans of the camp and giving details of the equipment.

The meeting was the most successful of the various events held during the ten years of the club's existence both in spirit and numbers and set a standard for future happenings. The Lowell members came down in automobiles, and Doctor Maclaurin and the Boston guests returned in Mr. Rollins' car.

Those present were: President Maclaurin, Messrs. Rollins, Fay, Rand and Morss of Boston; Atwood, Batchelder, Bowers, Bowers, G. W., Carney, Dempsey, Eames, Faulkner, Hildreth, Kimball, Lambert, Lindsey, Nelson, Simpson, Stevens, and Wesson, of Lowell; Chase, J. C., of Derry Village, Chase, A. T., of Haverhill, Hildreth and Prescott of Westford, Lambert of Tyngsboro, Adams Alden, Bridge, Collins, Eichler, French, Gould, Hadley, Hale, Hamblett, Livermore, Pickles, Ripley, Ralton, Simpson, Sjöström, I. L., Sjöström, W. L., Walker and Walworth of Lawrence. —C

Newsboy Wins Tech Scholarship

Two years ago Thomas A. Edison and James P. Munroe, '82, offered a scholarship at the Institute of Technology to newsboy graduates of high schools. The factors considered were the candidate's need, scholarship, character and promise of achievement. The successful candidate this year was Abram Hamburg, twenty years old, a native of Russia who came to this country in 1902. He was graduated from the Brimmer School and later from the School of Mechanic Arts. He sold papers while carrying on his school work in which he made very creditable advance.

Railroad Night at Minneapolis

On Friday evening, November 3, the members of the Technology Club of Minnesota got together for the first of a series of monthly dinners and smokers during the winter.

The meeting was held at the Minneapolis Commercial Club and it proved a very enjoyable and interesting evening, for it turned out to be a "Railroad Night."

Henry Yoerg, '95, was slated to tell of his experiences with the Great Northern road with which he has been connected since graduation. After a description of the shops and some interesting details in connection with new devices for economy in water and coal, he called on T. A. Foque, '88, the mechanical superintendent of the Soo road.

Mr. Foque gave an interesting talk on the troubles of a public service corporation and some of the difficulties encountered in their new extension work.

E. B. Thompson, '83, the superintendent of the Omaha Railroad, then took the floor and spoke of many amusing incidents connected with "new" economical devices submitted to his attention by several "would-be" inventors.

F. B. Walker, '01, finished the talks of the evening in a summary of the work of the Great Northern on the coast during the past ten years. His description of the Seattle and Cascade tunnels was most instructive.

Refreshments were served and the meeting broke up after deciding to hold a dinner in St. Paul early in December.

Finance Commission Active

The first meeting of the Finance Commission which has surveillance over the accounting of the various student activities was held November 16. This committee consists of the treasurers of the various activities, the chairman of the Institute Committee and the alumni members, G. B. Perkins, '05, who succeeds M. R. Scharff, '09, H. L. Coburn, '98, and I. W. Litchfield, '85. The object of the Finance Committee is to secure uniform accounting and monthly reports, to see that collections are made promptly and that expenditures come within the income of the various societies, to cooperate in the matter of purchases, etc., and to guard the financial integrity of all Technology undergraduate interests.

Fourteen activities were represented at the meeting and every one of them was able to show a favorable balance. Each report was subject to general discussion and many good suggestions were made. An enthusiastic discussion followed the reports, and a number of important questions were brought up for future action. A committee was appointed to investigate the methods of bookkeeping used by the various student actitivies with instructions to recommend a uniform system of accounting. Arrangements will also be made to secure a lawyer to whom the business managers may go for advice if needed. The more important contracts that have been made, or are likely to be made, were discussed. The next meeting of the committee will be held December 7 at the Union.

Professor Hale Resumes Work

Everyone will rejoice to learn that Professor George E. Hale, '90, has returned from a year of enforced rest abroad so much improved in health that he is able to resume his work as the director of the Solar Observatory of the Carnegie Institution at Mt. Wilson, Pasadena. When he was recently in Boston he appeared in most excellent health and spirits. While in England the University of Cambridge added another honor to the many already received by him by conferring upon him the degree of Doctor of Science.

The Engineering Record states that Messrs. Metcalf & Eddy (Leonard Metcalf, '92) have opened a branch office in Chicago in order to facilitate the administration of certain public service corporations which are being operated by the firm and to be in closer touch with the interests of Western clients. William T. Barnes, '93, who has been connected with the firm for a number of years will be in charge of the Western office.

Pittsburgh Smoker of the M. I. T.

The Pittsburgh Association opened its winter series of entertainments with a smoker at the University Club on Thursday, November 23, 1911.

The date was most auspicious as it allowed us to have for our principal guest of the evening our "grand old friend" Dr. William T. Sedgwick of the Institute.

The original plan of having a talk by one of the Pittsburgh councilmen was changed owing to the fact of Doctor Sedgwick's visit to Pittsburgh, and we took this opportunity to have him tell us about the "New Tech" and its plans.

Coming direct from Boston, Doctor Sedgwick was full of the subject and was also in touch with the situation up to the last minute through the kind attention of Mr. Litchfield, '85, at Boston.

Doctor Sedgwick spoke from the heart in his narrative of the history relating to all the moves toward establishing the new site and buildings; how the Institute was maintaining its usual high standard, and what the possibilities were for the future.

An earnest plea was made to the alumni for funds to erect the new buildings of the Institute and we hope sincerely that his good effort may bear fruit by "loosening up" the pocket-books of some of our able alumni and friends.

He told us also, in the most tender manner, of the last days of Mrs. Rogers and of her wonderful devotion to Tech and its future. Mrs. Richards was also remembered very kindly in his address. The changes of the Faculty were outlined and a complete record of all the events to date were enumerated.

Doctor Sedgwick claims his visit to Pittsburgh has made him twenty years younger, and we believe him, and feel he thoroughly enjoyed the rousing good time we all had. The boys turned out in goodly numbers and sang and cheered lustily.

A luncheon was served at ten o'clock consisting of all the good things to eat and drink. Our guarantors' association provides the funds to furnish these smokers free to all, and the plan is working most satisfactorily. The association now numbers one hundred and sixty-five.

Doctor Sedgwick gave a most delightful and instructive address on "Municipal Sanitation and its relation to Public Health" at Memorial Hall, Pittsburgh, on Wednesday, November 22, 1911. The lecture was arranged under the auspices of the University of Pittsburgh. —Y

Army and Navy at Technology

Following the custom of recent years, the United States Government has sent officers of the army and navy to the Institute to receive instruction in electrical engineering. These are in addition to the graduates of the Naval Academy who are sent to take a course in naval architecture. This year the Naval Academy is represented by Ensign G. K. Calhoun, who was graduated from Annapolis in 1908. He has recently been stationed at the United States Naval Observatory at Washington where he has done considerable original work in wireless telegraphy, ship propulsion, gyroscopic compasses and chronometers.

The army is represented by Capt. Edward Canfield, West Point, 1901, and First Lieut. F. Q. C. Gardner, West Point, 1904. Both officers have been connected with the Coast Artillery Corps, Captain Canfield being stationed at Puget Sound and Lieutenant Gardner at Fortress Monroe. Both men will pursue a special course in electrical engineering.

Professor Gunn Married

Professor Selskar M. Gunn, '04, of the department of biology and public health, was married to Miss Clara J. Coffin, daughter of Mr. and Mrs. Edward Willis Coffin of East Orange, N. J., on November 15. Professor Gunn was formerly health officer of Orange and then became connected with the Institute. Last spring he was secured by the Bureau of Economy and Efficiency to reorganize the health department of the city of Milwaukee, Wis., a commission from which he has only recently returned, and which has been handled with remarkable skill and effectiveness.

New Departure in English

The problem before the English department of the Institute is an unusual and difficult one. The time allowed for the exercises in English is extremely small, and the unevenness in the literary preparation of new men as well as in their ability to grasp the principles of English composition, complicates the situation still further. The department is giving the most conscientious attention, not only to groups having varied requirements, but to individual students as well, giving an equal amount of thought to the necessities of those who come to us from other countries.

In order to counteract the general tendency of preparatory schools to foster and strengthen habits of memory rather than of thought, the freshmen are given a good grounding in logic at the beginning of the first term. This in connection with written work is designed to stimulate in the student a realization of the value of each expression he makes use of, and more important still, of reasoning independently.

The results of the experiment seem so good to the department that it is making an effort to obtain an extension of time so that the course may be expanded. The cultivation of the logical faculty is so closely connected with all technical education that the course is of general application and value. "It has the advantage, moreover," said Professor Arlo Bates, "of taking the student out of any rut into which he may have fallen in the fitting school, and of giving him a new start. Since his success in the course depends chiefly on the acuteness with which he uses his reasoning powers, it helps to put him in the right attitude toward all the work which the Institute requires of him."

Intercollegiate Cross-Country Race

The intercollegiate cross country race was held over the new Brookline Country Club course, November 25. Cornell, which has taken first honors with monotonous regularity, again crossed the line, easily the winner of this last meeting, with a score of 48. The other teams finished in the following order: Harvard, second, 58; Pennsylvania, third, 125; Dartmouth, fourth, 127; Technology, fifth, 129; Yale, sixth, 154; Syracuse, seventh, 156; Brown, eighth, 188; Princeton, ninth, 206, and Columbia, tenth, 232.

The race was one of the best in the history of intercollegiate cross-country running as the men stuck to the leaders until almost within the finish, when a few final spurts changed the standing of some of the teams. The Tech men ran a very creditable race as may be seen from the score. They were beaten only four points by Pennsylvania and two points by Dartmouth.

The team score was as follows:

College						Total
Cornell	1	2	13	15	17	48
Harvard	5	7	11	14	21	58
Pennsylvania	3	9	22	44	47	125
Dartmouth	4	8	10	51	54	127
Technology	16	19	23	28	43	129
Yale	12	30	34	36	42	154
Syracuse	18	29	32	38	39	156
Brown	6	24	37	57	64	188
Princeton	26	35	40	49	56	206
Columbia	25	41	46	58	62	232

Death of Charles A. Reed

Charles A. Reed, '80, of the firm of Reed & Stem, architects in charge of the design of the new Grand Central Station, New York City, died at his home in New York City on November 13. He was born in Avon, N. Y., in 1857, and attended Massachusetts Institute of Technology for a short time. His professional work commenced in St. Paul, Minn., in 1882. He soon specialized in railway station work and was architect for stations on the Great Northern, Northern Pacific, Chicago Great Western and Norfolk & Western railways. Besides well-known railway buildings in Seattle and Tacoma, Wash., Norfolk, Va., and other cities, he was the designer of several public buildings in St. Paul.

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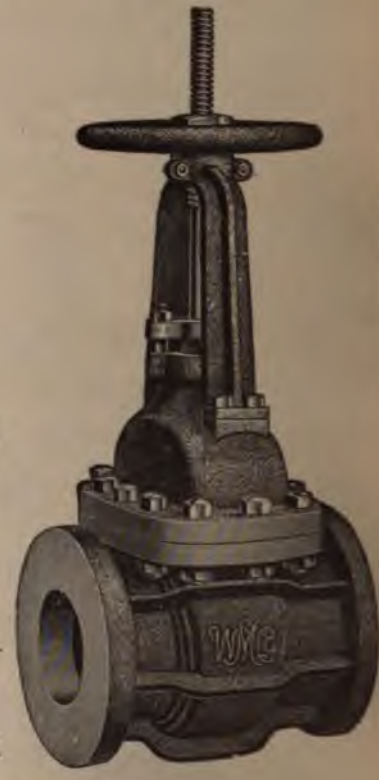

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